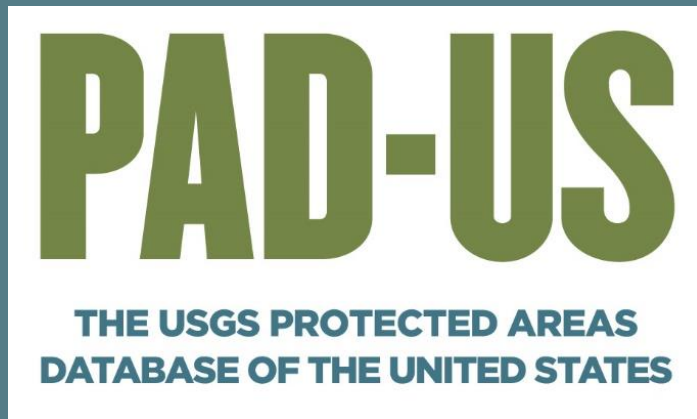


America's Inventory of Parks and Protected Areas



New and improved!

Main Interior Building - Rachel Carson Room

Your Panelists

Lisa Johnson

PAD-US Coordinator, USGS Cooperator



Troy Warburton

Automated Lands Program Manager, USFS



Ron Salz

Chief Cartographer, FWS



Doug Vandegraft

Chief, Geospatial Services Division, BOEM

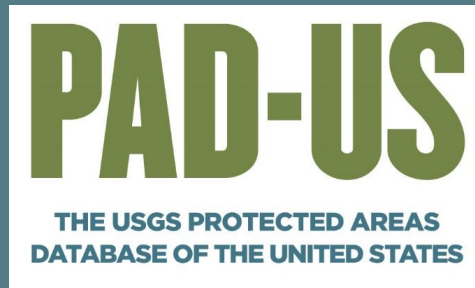


Bob Ratcliffe

Chief, Conservation and Outdoor Rec, NPS



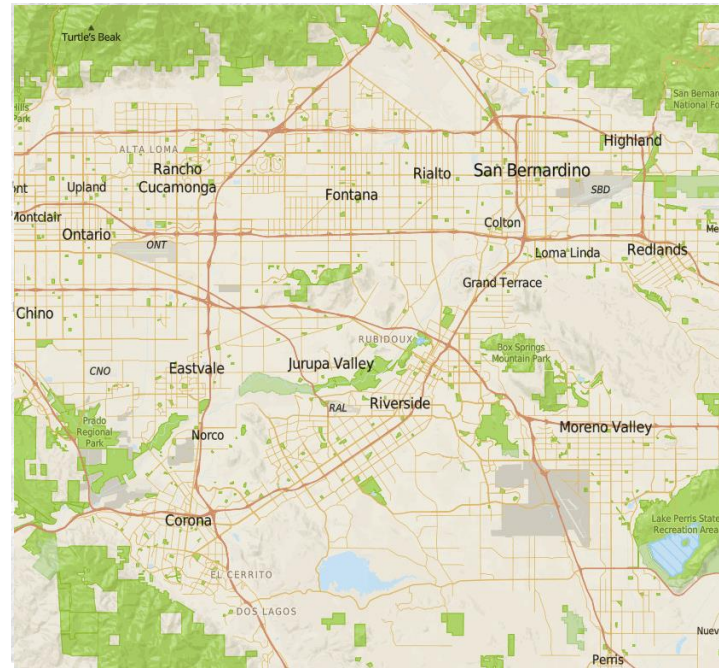
What is PAD-US?



First, what do we all want?

- Find **any** U.S. park or protected area
- All in **one** dataset
- Designed to serve **many** user needs

This is the PAD-US vision



What do we all want to include? Everything.



What is a “protected area”?

Broad meaning:

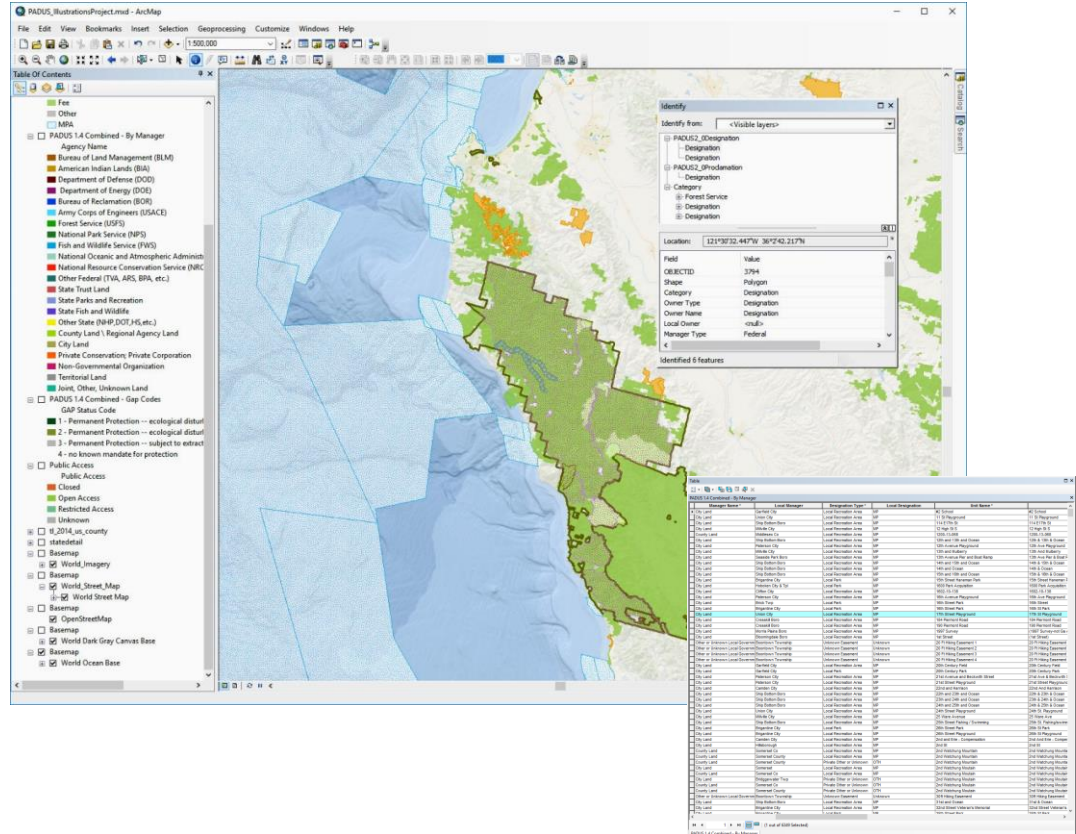
- Natural, Rec., Historic, Cultural
- Includes public land + nonprofit areas
- Public fee, conservation easements, management designations, marine
- Small to large
- Public parks and other protected



PAD-US is geospatial (GIS) data

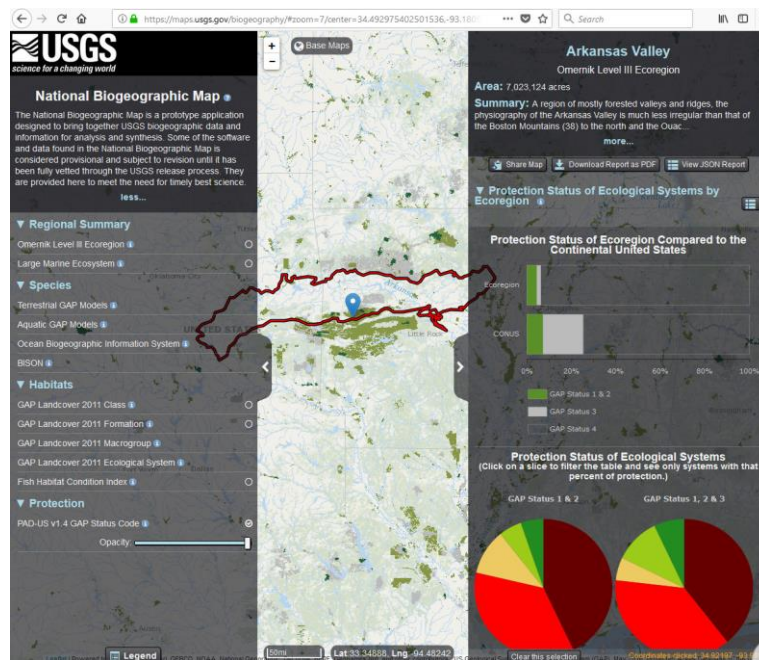
- 9.3 billion acres*
- 360,000+ units
- 18,000+ agencies
- Published by USGS

*total includes ownership and overlapping designations, easements, proclamation boundaries, plus marine areas



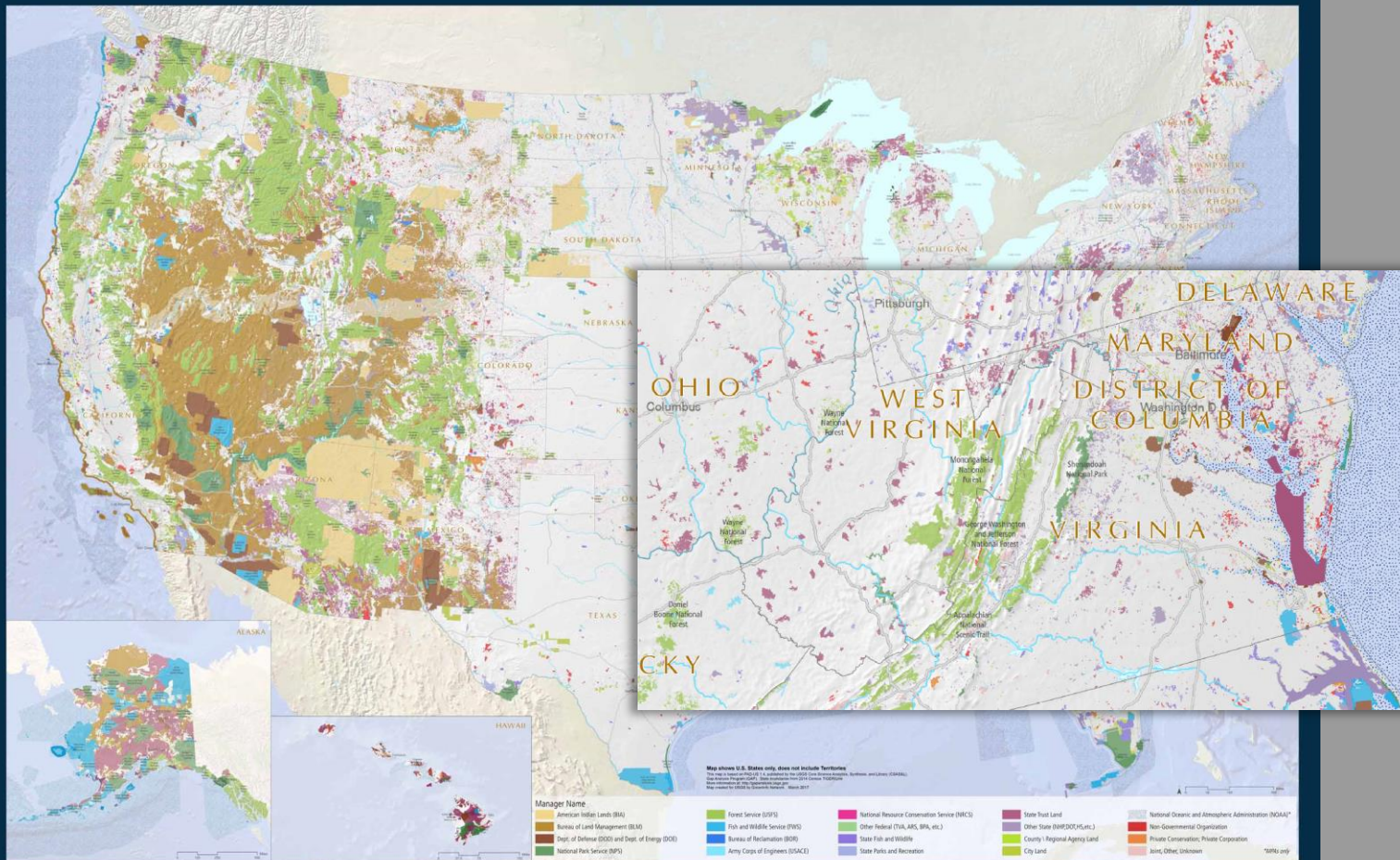
PAD-US is managed by USGS

- Part of the National Biogeographic Map
- Required for USGS biodiversity analysis mission
- But also built for general, diverse uses
- Broad org commitment to PAD-US
- PAD-US benefits from tech advances across the organization

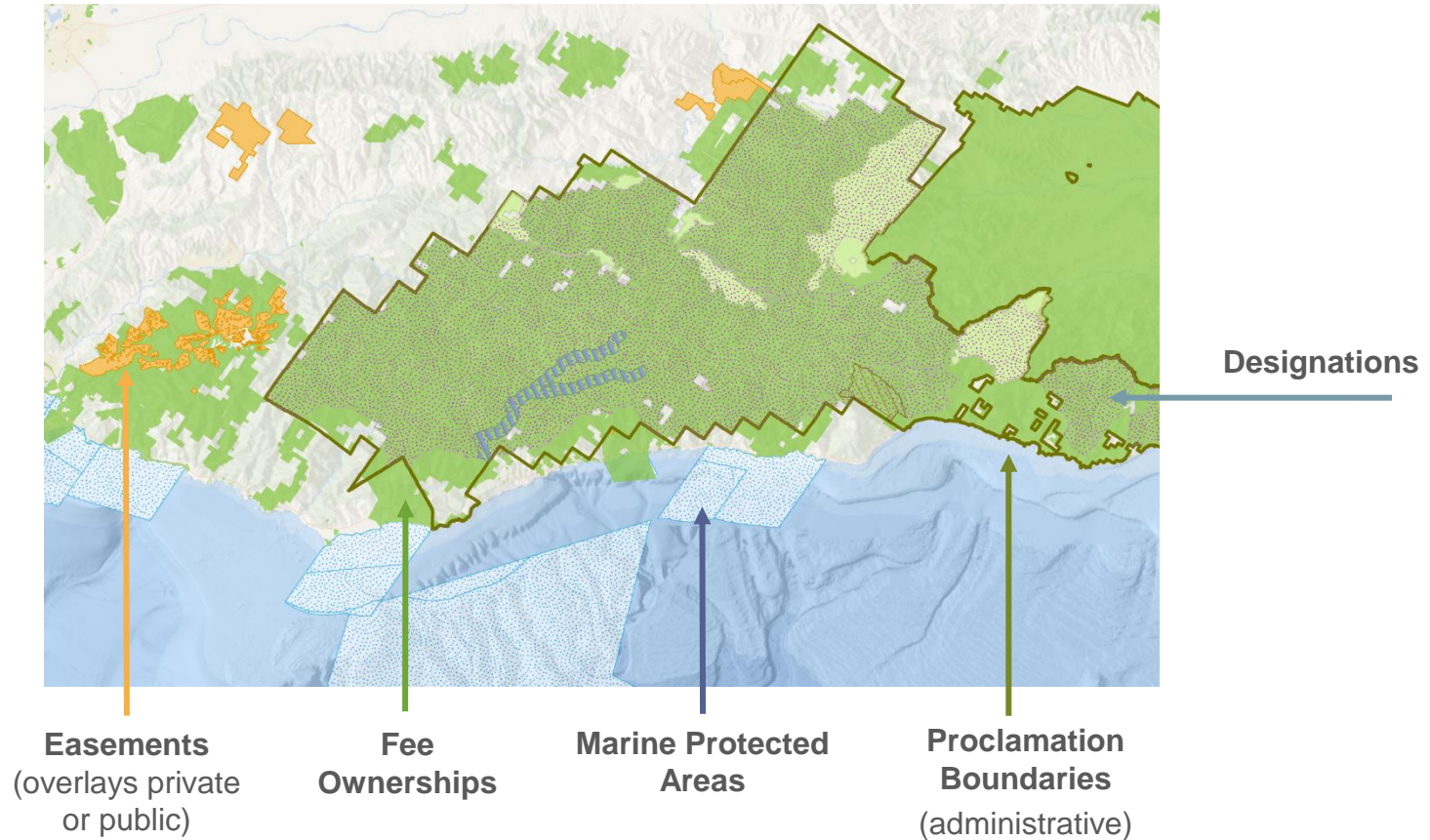


<https://maps.usgs.gov/biogeography/>

Protected Areas Database of the U.S. (PAD-US) - Land Management



PAD-US is boundaries



What can PAD-US tell you?



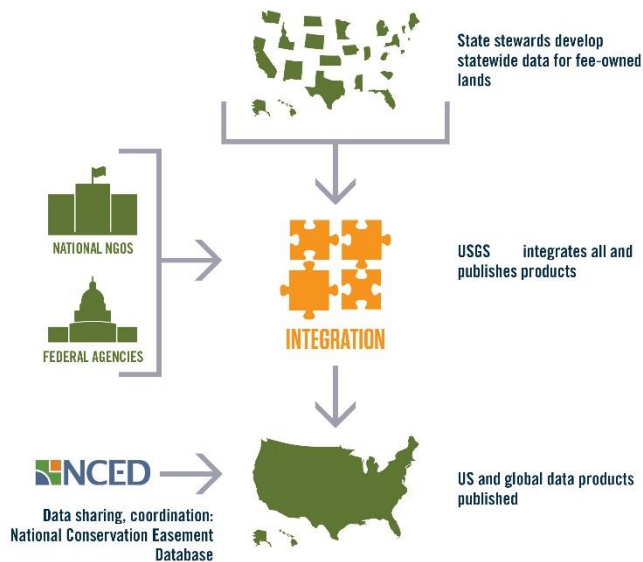
Collaboration builds PAD-US

How PAD-US is Built

States

Federal

Nonprofits



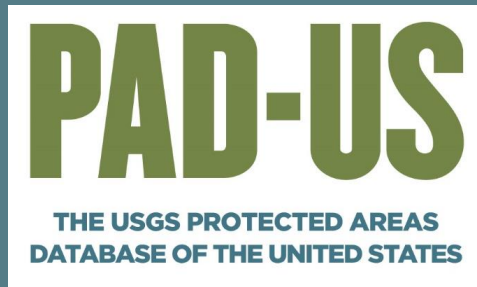
PAD-US 2.0 Publication Status



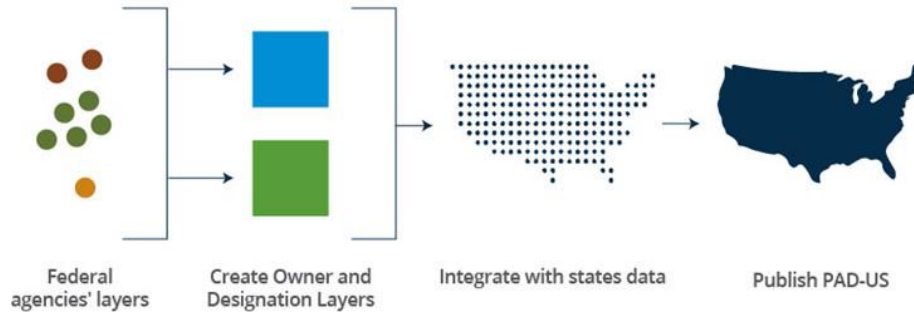
Currently in USGS **data review**
For PAD-US announcements, **contact**
The **PAD-US Team**
pad-us@usgs.gov

What's new in 2?

PAD-US 2.0 (2018)



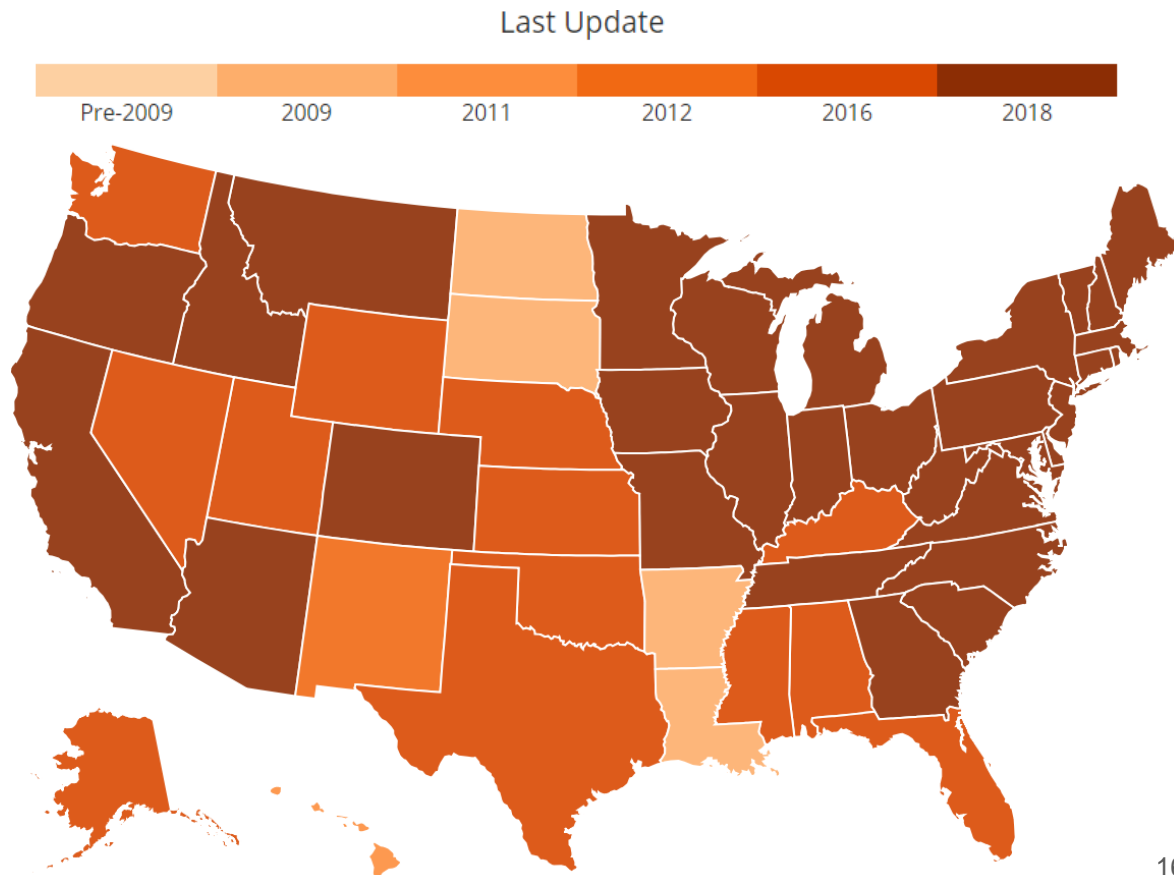
Federal updates



Over 30 state updates

12 from state steward network:

- California
- Georgia
- Iowa
- Idaho
- Minnesota
- Missouri
- New Jersey
- New York
- Oregon
- Tennessee
- Virginia
- West Virginia



Nonprofit databases integrated

TPL Conservation Almanac – Major updates in 9 states: Arizona, Colorado, Georgia, Illinois, Montana, North Carolina, New Jersey, Oregon & South Carolina.

DU Conservation and Recreation Lands (CARL) Database – Improvements to 5 states: Illinois, Indiana, Michigan, Ohio & Wisconsin.

TNC Secured Areas – Full data replacement in 9 eastern states + D.C.: Connecticut, Delaware, Massachusetts, Maryland, Maine, New Hampshire, Pennsylvania, Rhode Island, & Vermont.

TNC Fee Lands – Lands owned/managed by The Nature Conservancy

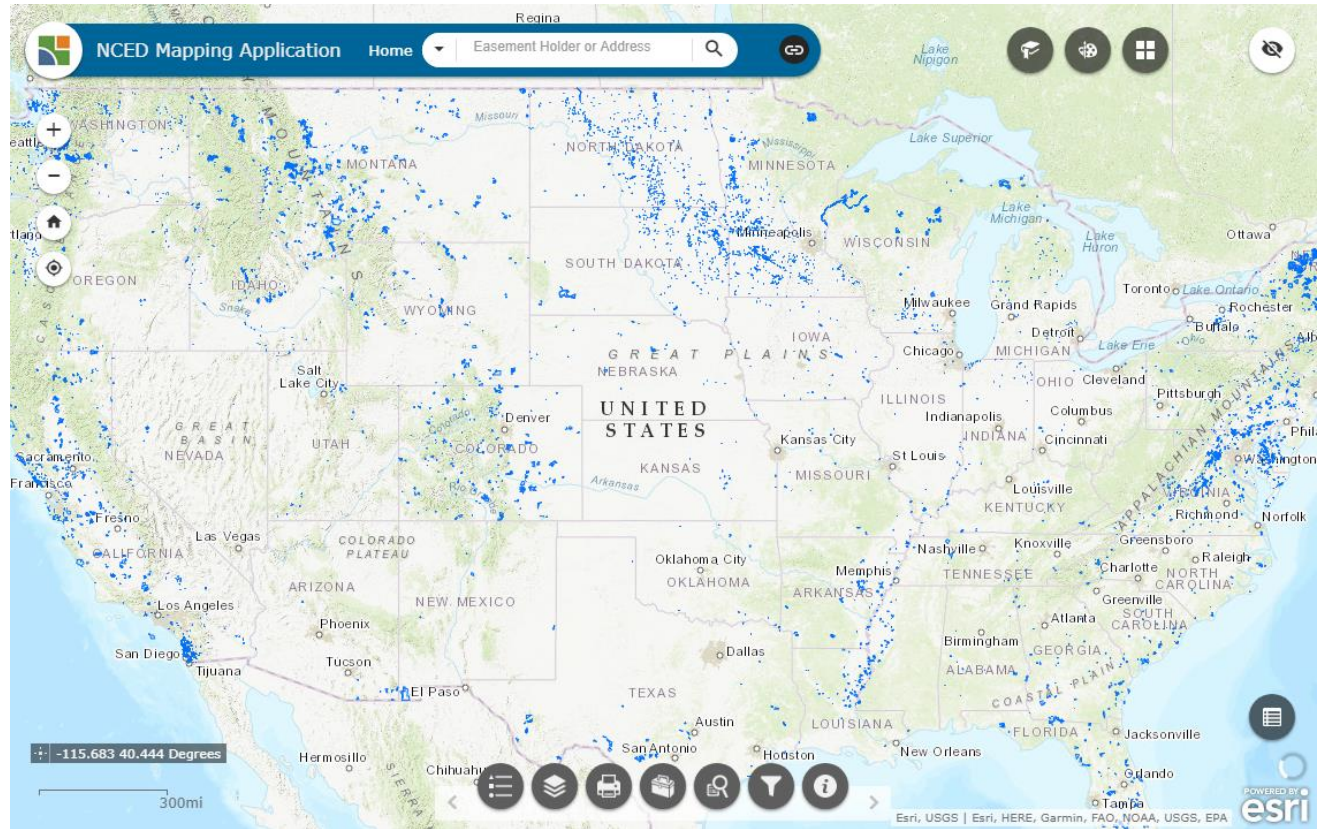
TPL ParkServe – *Coming next*



New easements from NCED

National
Conservation
Easement
Database

(NGO-led)

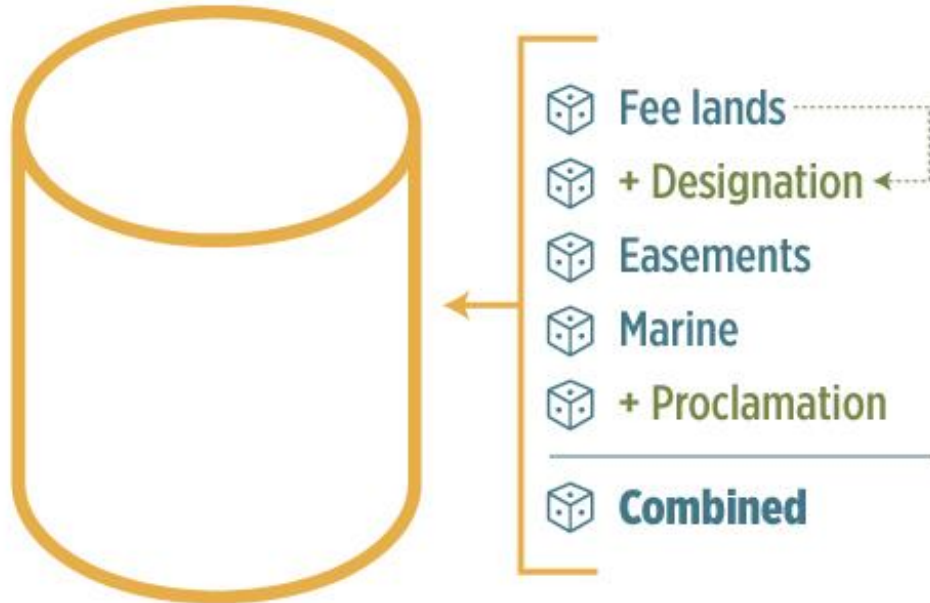


Nearly 24 million acres in PAD-US

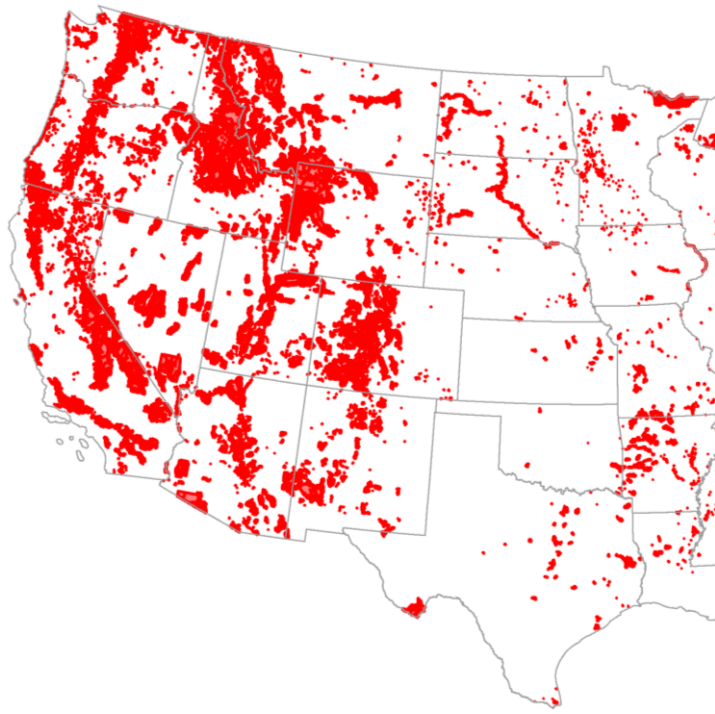
A better database – new structure

- Improve management of overlapping data
- Easier mapping and analysis

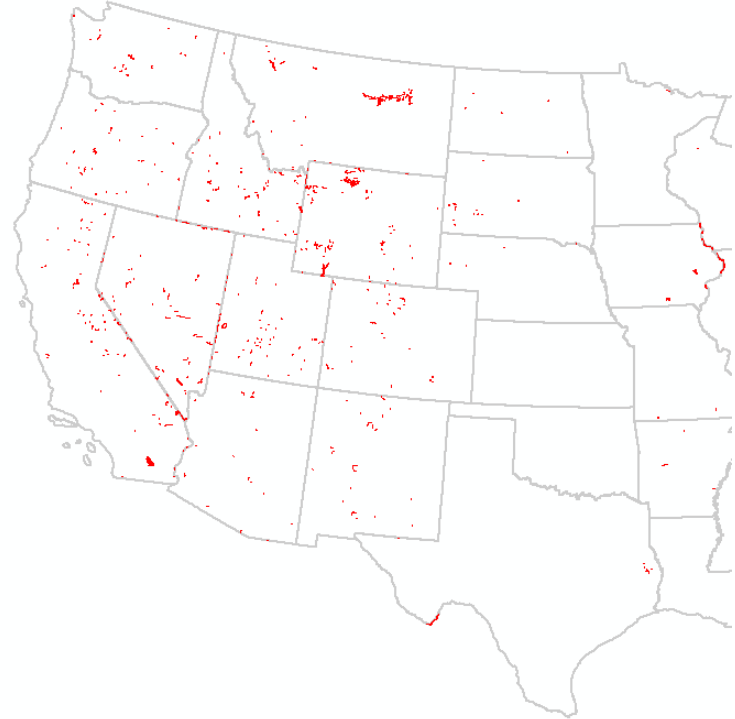
A Better Geodatabase for PAD-US



A better database – improved geometry



Prior PAD-US Data



NEW PAD-US Data

Downloadable statistics – coming soon!

Detailed Excel file
with pre-calculated
statistics

PADUS Version 1.4: PROTECTION STATUS, State (US States and Territories) ACRES						
For more information: http://gapanalysis.usgs.gov/PADUS						
May-2018						
ACRES Protected (GIS Calculated)						
GAP Status Codes						
State	1	2	3	4	Total GAP 1-2	Total GAP 1-3
Alaska	132,544,070	17,493,709	85,860,932	189,947,217	150,037,779	235,898,711
Alabama	110,645	481,806	875,795	32,080,539	592,451	1,468,246
Arkansas	171,225	2,699,666	1,040,226	30,123,163	2,870,891	3,911,117
American Samoa	1	12,331	34,772	324,789	12,332	47,104
Arizona	4,778,193	2,518,857	20,735,250	44,921,576	7,297,050	28,032,300
California	16,626,226	6,790,229	29,738,623	51,609,045	23,416,455	53,155,078
Colorado	3,914,622	2,533,248	21,148,063	39,023,987	6,447,870	27,595,933
Connecticut	2,277	64,873	205,205	3,275,498	67,150	272,355
District of Columbia	101	1	18	43,613	102	120
Delaware	77	49,723	115,249	1,427,759	49,800	165,049
Florida	2,381,463	2,159,881	6,025,340	31,517,824	4,541,344	10,566,684
Georgia	710,003	919,452	802,294	35,600,314	1,629,455	2,431,749
Guam	1	6,345	3,704	355,148	6,346	10,050
Hawaii	180,509	700,269	1,317,919	4,822,015	880,778	2,198,697
Iowa	5,313	471,613	130,157	35,407,399	476,926	607,083
Idaho	4,592,564	2,810,254	28,611,262	17,469,771	7,402,818	36,014,080
Illinois	518,778	446,559	216,564	35,882,741	965,337	1,181,901
Indiana	47,927	595,105	116,477	22,549,000	643,032	759,509
Kansas	29,909	323,188	145,110	52,159,823	353,097	498,207
Kentucky	110,529	249,464	974,105	24,526,910	359,993	1,334,098
Louisiana	131,353	1,626,439	1,267,666	30,494,719	1,757,792	3,025,458
Massachusetts	100,975	193,521	727,783	5,732,394	294,496	1,022,279
Maryland	5,701	271,177	416,197	7,246,606	276,878	593,076
Maine	210,247	862,787	1,451,475	20,118,668	1,073,034	2,524,509
Michigan	355,719	4,293,887	4,041,185	53,205,698	4,649,606	8,690,791
Minnesota	1,279,716	2,416,345	8,880,574	43,061,824	3,696,061	12,576,735
Missouri	120,433	1,336,954	1,433,030	41,722,013	1,457,387	2,890,417
Commonwealth of the Northern Mariana Islands	1	203,784	1	1,060,541	203,785	203,786
Mississippi	51,192	1,230,845	874,616	28,845,291	1,282,037	2,156,653
Montana	4,704,527	3,221,235	26,431,998	59,747,389	7,925,762	34,357,760
North Carolina	513,294	781,865	1,913,997	31,234,986	1,295,159	3,209,156
North Dakota	39,776	862,059	1,985,076	42,319,976	941,834	2,925,910
Nebraska	82,082	428,455	578,847	48,413,001	510,537	1,089,384
New Hampshire	156,262	158,321	1,156,343	4,512,500	314,583	1,470,926
New Jersey	73,954	717,523	415,681	4,375,263	791,477	1,207,158
New Mexico	1,875,663	2,419,921	20,265,254	53,256,973	4,295,584	24,560,838
Nevada	4,045,053	6,744,390	46,133,680	13,843,031	10,789,443	56,923,123
New York	1,247,246	1,958,018	1,462,136	30,247,677	3,205,264	4,667,400
Ohio	38,260	169,850	852,306	27,627,863	208,110	1,060,416
Oklahoma	120,544	955,706	500,160	43,158,918	1,076,250	1,576,410
Oregon	3,470,783	4,494,021	27,307,311	27,690,189	7,964,804	35,272,115
Pennsylvania	281,201	455,929	3,883,559	24,853,952	737,130	4,620,689
Puerto Rico	37,058	118,621	5,621	3,246,597	155,679	161,300
Rhode Island	1,582	61,129	28,449	897,547	62,711	91,160
South Carolina	88,175	767,231	714,423	18,923,254	855,405	1,569,829

New online help system – coming soon!

**PAD-US HELP**

QUICK START

▼ **OVERVIEW OF PAD-US**

INTRODUCTION

WHAT'S NEW IN PAD-US VERSION 2.0

▶ **HELP PAGE 2**

▶ **HELP PAGE 3**

Overview of PAD-US

Introduction [🔗](#)

The USGS Protected Areas Database of the U.S. (PAD-US) is the official GIS-based national inventory of park and protected area boundaries within the U.S.

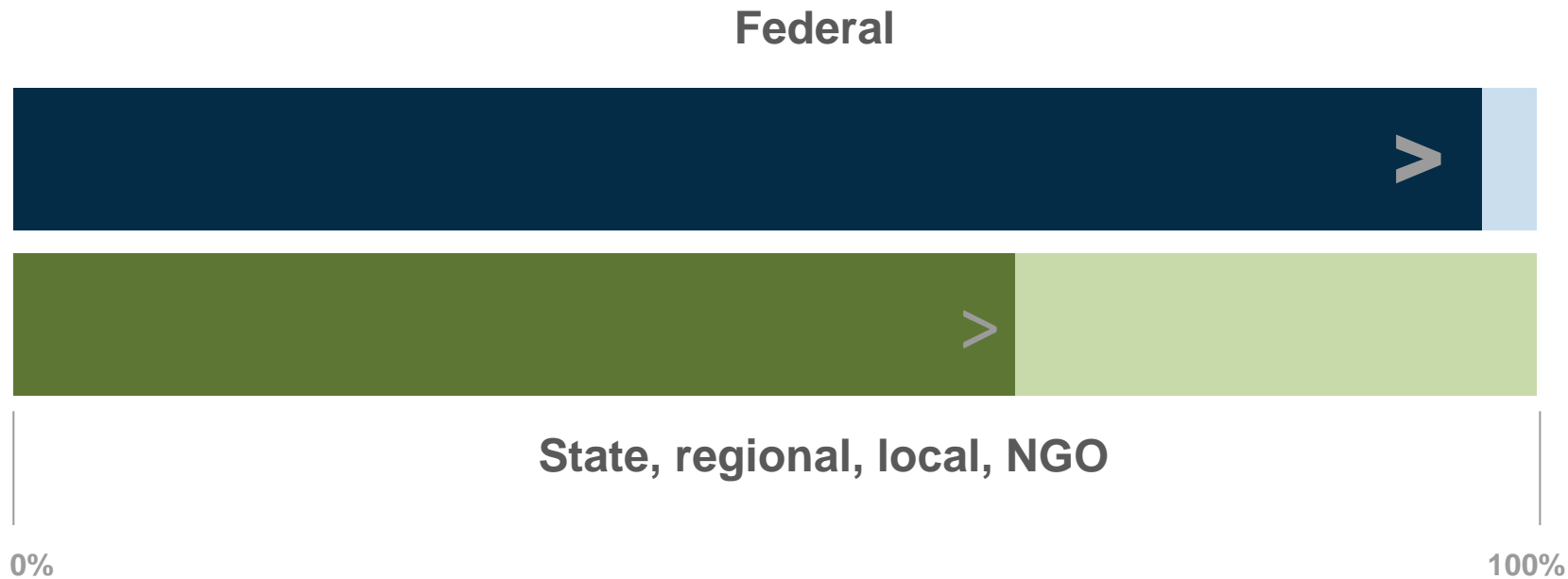
- Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vestibulum sit amet ligula eleifend, tristique nisi vitae, maximus metus.
- Sed aliquet turpis sit amet lectus feugiat porttitor.
- Morbi dictum nunc sit amet aliquet faucibus.
- Sed maximus nisi eget facilisis laoreet.
- Sed id orci pellentesque, elementum nulla ac, sodales dolor.

What's new in PAD-US version 2.0 [🔗](#)

PAD-US version 2 was published in December 2017 and includes:

- Federal lands – updated for all agencies to most current federal land data
- Federal lands – updated for all agencies to most current federal land data
- State updates – updated data for (list states.)
- NCED updates – (as of date)

Inventory completeness at 2.0



Steward reports

ESTIMATED FEDERAL LANDS

Individual federal agency estimate including fee parcels, easement in

National Park Service
Forest Service
Fish and Wildlife Service
Bureau of Land Management
Army Corps of Engineers
Department of Defense
Bureau of Reclamation

Online and PDF c

Protected Areas Database of the United States (PAD-US) — Data Steward Report

FEDERAL

Forest Service



Steward program description: Established in 1905, the Forest Service is an agency of the U.S. Department of Agriculture and manages national forests and grasslands which encompass 193 million acres of land in almost 300 separate units. The Service's Automated Lands Program (ALP) provides data on these lands to PAD-US.

Steward Information

Program Name: Washington Office-Lands and Realty Management-Automated Lands Program
Organization Status: Active
Program Status: Active
Website: <https://www.fs.fed.us/>
Data Download URL:
<https://data.fs.usda.gov/geodata/edw/datasets.php?xmlKeyword=PADUS>
Other Page or Portal: <https://www.fs.fed.us/land/staff/index.shtml>

Primary Contact

Troy Warburton, ALP Program Manager
Organization: Forest Service
trwarburton@fs.fed.us / 801-975-3433

Secondary Contact

Holly Martin, Data Analyst
Organization: Forest Service
hlmartin@fs.fed.us / 503-729-6676

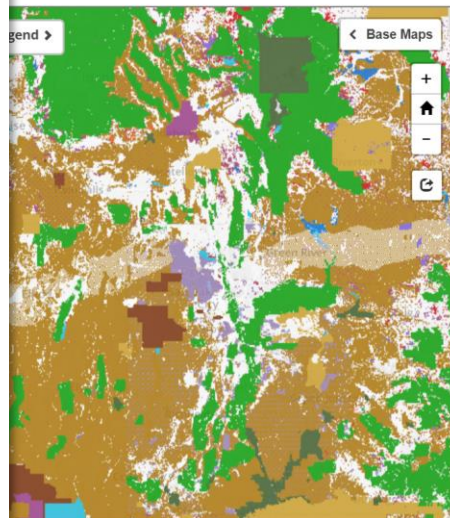
This report is in support of PAD-US, the Protected Areas Database of the US, published by USGS. Information on PAD-US data stewards can be found at the www.ProtectedLands.net PAD-US companion website. More information about PAD-US is available on the USGS PADUS website: <http://gapanalysis.usgs.gov/padus>

Current Completeness of Agency Data: 99 %

Notes: Fee parcel ownership, easement interest and designations (congressional and executive) for all USFS lands available in PAD-US format from national data steward. Active participation in FGDC Federal Lands Working Group. Improved administrative designations (complete RNAs, national grazing/mining allotments, etc.) are needed to better represent biodiversity protection and/or recreation opportunities on multiple use lands.

Updates Contributed to PAD-US

PAD-US 2.0	Other Designated	September 2017
PAD-US 2.0	Easements	September 2017
PAD-US 2.0	Spec. Interest Area	September 2017
PAD-US 2.0	Wilderness	September 2017
PAD-US 2.0	Wild/Scenic Rivers	September 2017
PAD-US 2.0	Roadless Areas	September 2017
PAD-US 2.0	Withdrawal Areas	September 2017
PAD-US 2.0	NFS Land Units	September 2017
PAD-US 2.0	Surface Ownership	September 2017



Federal Lands Working Group - an interagency success story



PAD-US Federal Lands VISION



Complete Accurate Standardized Annual

aggregation of federally owned lands and waters

with management designations to fulfill **common agency needs**

Aiming for: full parcel-based inventory + automated updates



Federal Lands Working Group (FLWG)

14 agencies collaborating to develop federal parcel ownership database

<https://communities.geoplatform.gov/ngda-govunits/federal-lands-workgroup/>

Integrating Federal Lands into PAD-US

Geospatial and realty professionals from land management (USFS, BLM, NPS, FWS, BOEM, BIA, USBR, NRCs, DoD, USACE, NOAA) and other federal agencies (USGS, Census, NWS) are working to integrate federal ownership and management boundaries to fully common agency needs.

Formed in October 2011, the FGDC Federal Lands Working Group is a subgroup of the National Boundaries Group (NBG). Focused on the development and annual publication of a cadastral geodatabase of aggregated federal lands and waters.

FY 2018 Goals:

- Automate the translation of agency data into the PAD-US format
- Contribute to the next PAD-US update, published by USGS
- Assess and improve inventory completeness
- Assess and improve the compatibility of core attributes between agency datasets
- Implement standard ID system for links to other databases
- Identify and correct boundary overlaps to produce a "flat" file
- Share FLWG goals and accomplishments through outreach

FY 2017 Accomplishments

- Aggregated federal land ownership and management boundaries and characteristics into the PAD-US 2.0 format
- Automated the translation of USFS, NPS, and USFS data into PAD-US format
- Developed a tool to identify and resolve boundary overlaps and other errors
- Significantly reduced boundary overlaps between agency datasets, identified new priorities
- Estimated inventory completeness and developed agency reports to document source data
- Expanded outreach to include OCS, BIA, and NOAA, in addition to the USGS Office of Public Inquiries
- Maintained monthly calls, annual meetings and agency contracts

FGDC Federal Lands Working Group
<https://communities.geoplatform.gov/ngda-govunits/federal-lands-workgroup/>

FGDC Federal Lands Working Group Primary Contacts

NAME	ORGANIZATION	EMAIL
Doug Vandegrath, Chair	Bureau of Ocean Energy Management (BOEM)	doug.vandegrath@boem.gov
Lee Johnson, Co-Chair	USGS Gap Analysis Program (GAP) - BSI Cooperative	lejohnson@usgs.gov
Bob Perce	USGS National Geodetic Program, Chart Data Coordination Subcommittee	perce@ngda.gov
Laura Wagner	U.S. Census Bureau (Census)	Laura.L.Wagner@census.gov
Debbie Vandegrath	Bureau of Land Management (BLM)	debbievandegrath@blm.gov
Roger Johnson	National Park Service (NPS)	Roger_M_Johnson@nps.gov
Ben Sog	U.S. Fish and Wildlife Service (FWS)	ben_sog@fws.gov
Tracy Warburton	U.S. Forest Service (USFS)	tracywarburton@usfs.gov
Ryan Alcorn	U.S. Bureau of Reclamation (USBR)	ralcorn@usbr.gov
Meredith Bridges	U.S. Army Corps of Engineers (USACE)	Meredith.Bridges@usace.army.mil
Ben Wenzel	Bureau of Indian Affairs (BIA)	ben.wenzel@bia.gov
David Lefranche	Department of Defense (DoD)	david.lefranche@dod.mil
Sarah Reicher	Natural Resources Conservation Service (NRCS)	sarah.reicher@aphis.usda.gov
Andrew Kelly	National Wildlife Consulting Group (NWC)	andrew_kelly@nwc.gov
Neil D'Arcy	National Oceanic and Atmospheric Administration (NOAA)	neil.darcy@noaa.gov

Doug Vandegrath - BOEM
 Lee Johnson - USGS
 Bob Perce - USGS
 Laura Wagner - Census
 Debbie Vandegrath - BLM
 Roger Johnson - NPS
 Ben Sog - FWS
 Tracy Warburton - USFS
 Ryan Alcorn - USBR
 Meredith Bridges - USACE
 Ben Wenzel - BIA
 David Lefranche - DoD
 Sarah Reicher - NRCS
 Andrew Kelly - NWC
 Neil D'Arcy - NOAA

FGDC Federal Lands Working Group
<https://communities.geoplatform.gov/ngda-govunits/federal-lands-workgroup/>

GeoPlatform | Governmental Units

Federal Lands Working Group

Current Fact Sheet

NGDA Datasets Theme Strategic Plan Theme Implementation Plan FGDC Address Standard Wiki

Federal Lands Working Group

Geospatial and realty professionals from land management (USFS, BLM, NPS, FWS, BOEM, BIA, USBR, NRCs and DoD) and other federal agencies (USGS, Census, NWS) are working to integrate land ownership and management boundaries to fulfill common agency needs.

Formed in October 2011, the FGDC Federal Lands Working Group (FLWG) is a subgroup of the National Boundaries Group (NBG), focused on the development and annual publication of a cadastral geodatabase of aggregated federal lands.

Objectives:

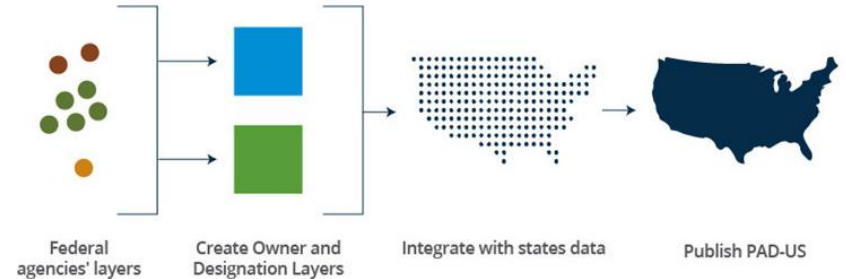
- Automate the translation of authoritative source data into the PAD-US format
- Contribute to the next PAD-US update, published by USGS
- Assess and improve inventory completeness

Upcoming Webinar meetings:

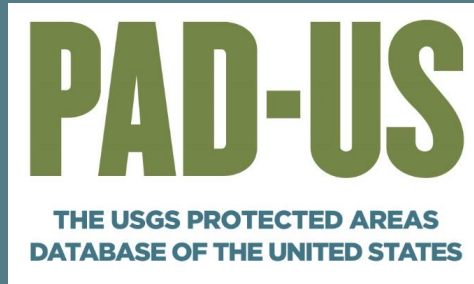
- Wed, June 13th (3-4 EDT)

FLWG drives data quality

- **Aggregated** data sets are only as good as **inputs**
- Federal lands in PAD-US come directly from **agencies**
- **FLWG** is THE coordinating framework for federal lands and waters
- Each agency has a data steward or team – need **support** to ensure the best inputs to PAD-US and agency use



Stories from the FLWG



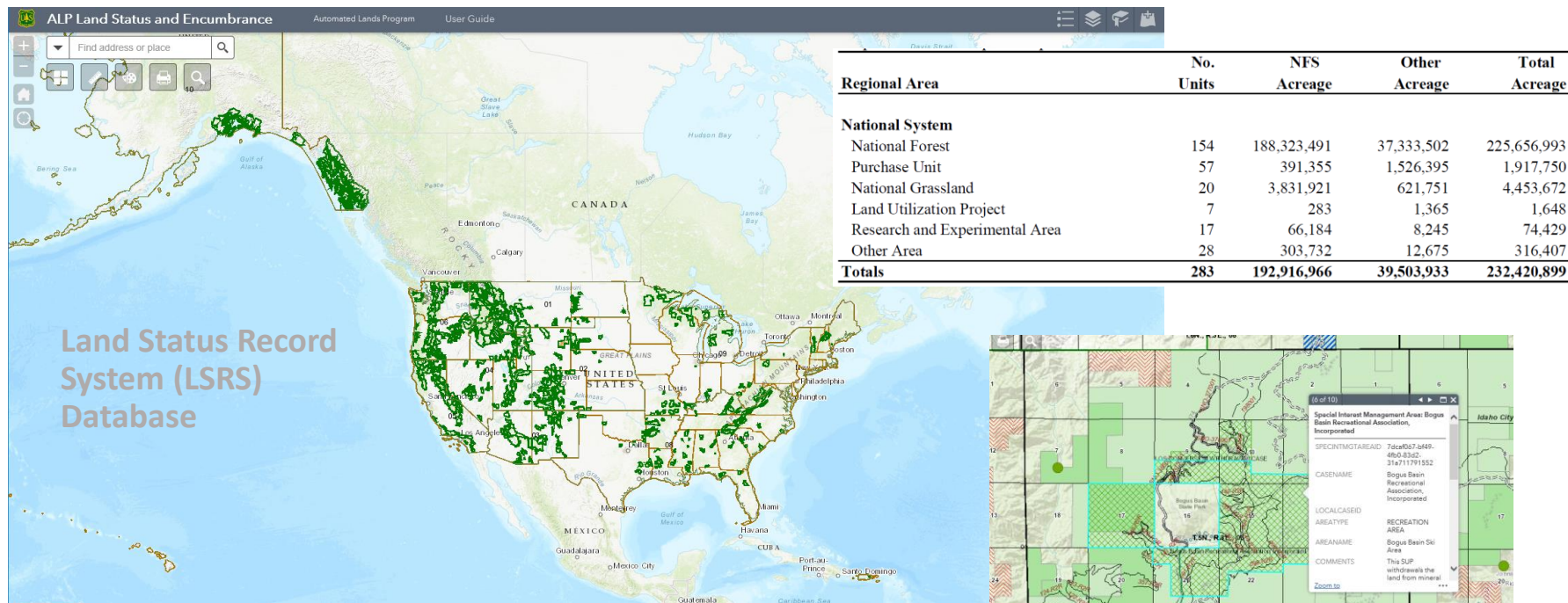
FLWG drives data quality

Troy Warburton

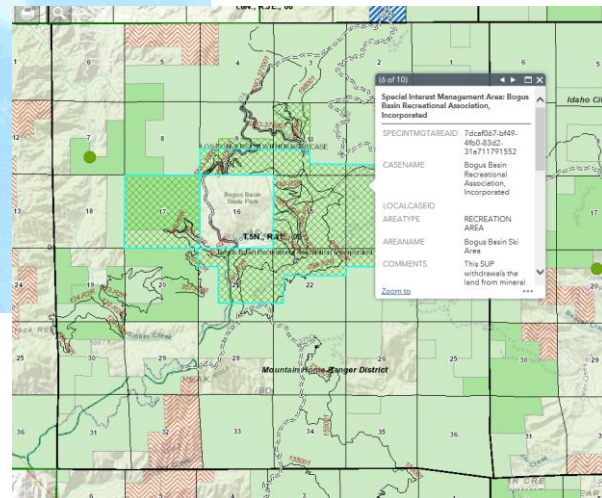
Automated Lands Program Manager, USFS



FLWG drives data quality



ALP is an information management program with the mission to digitally track all **Forest Service land status and survey management data**, including: **ownership, use restrictions**, and all official Forest Service **boundaries**.



FLWG drives data quality

Nearly complete Lands database

LSRS Production (Transaction) GIS Data Dictionary	
US_AdministrativeArea	
AdministrativeUnit	
GeopoliticalUnit	
LandStatus	
NFS_Boundary	
OwnerParcel	
RegulatedUse	
SeparatedRight	
SpecialUse	
LegalDescription	
Archive	
Corner	
Monument	
PLSSMinorSub	
PLSSFirstDiv	
PLSSSecondDiv	
PLSSThirdDiv	
PLSSTownship	
RecordBoundary	
SpecialSurvey	
ALP_Scratch	
ConstructionPoint	
ConstructionLine	
ConstructionPoly	

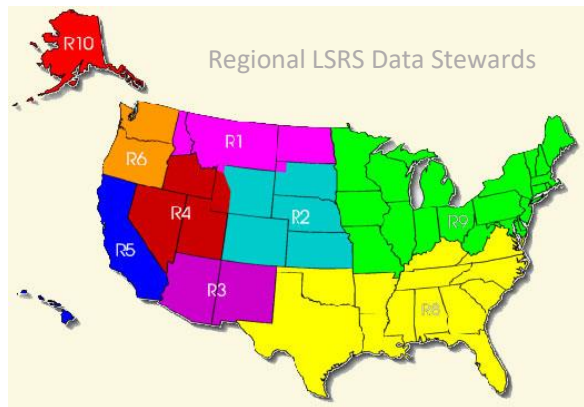
Weekly Refresh Schedule



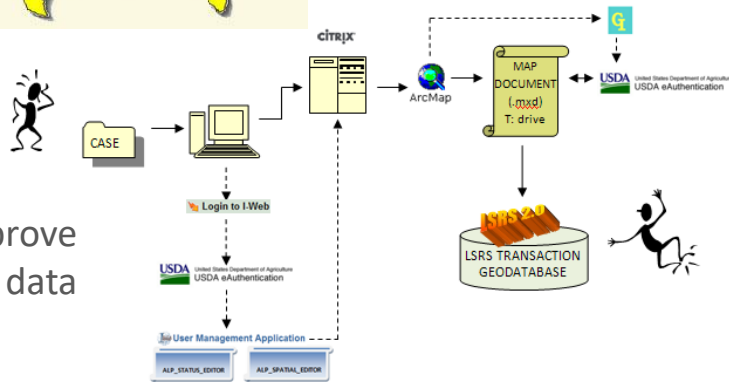
Enterprise Data Warehouse (EDW)

LSRS Publication GIS Data Dictionary	
Theme/Feature Class	PADUSDesignation
	PADUSEasement
	PADUSFee
	PADUSProc
	ProclaimedForest
	ProclaimedForest_Grassland
Administration	
AdministrativeForest	PurchaseUnit
AdministrativeRegion	QuarterSection
RangerDistrict	RightOfWay
Land	
	Section
BasicOwnership	SectionSubdivision
CERCLASITE	SMABoundary
Corner	SpecialInterestManagementArea
DevelopedSite	SpecialStatusArea
ALPGeopoliticalUnit	SurfaceOwnership
LandUtilizationProject	TCEMS_Cases
LMPU	Township
MineralRight	Tract
Monument	Wilderness
NationalGrassland	
NFSLandUnit	WildernessStatus
OtherNationalDesignatedArea	WildScenicRiver
OthNatlDesgAreaStatus	
OtherSurfaceRight	WildScenicRiverStatus
OtherSubsurfaceRight	Withdrawal

FLWG drives data quality



Work flow to improve
and maintain data



SharePoint

BROWSE

Enterprise Data Warehouse (EDW) Data Quality

About the EDW Tools, Training & Support Co

Dataset Status

- Approval Status
- Data Status
- Public/Sync Map Services
- Internal Map Services
- Open Data Esri
- Data Publication Status
- Web Services
- Data Download
- Newsletter

Strategic Plan Update

Unit Participation/Layer Publication

Data Quality Forum

Raster Data Warehouse

Users Forum

Operational Status

Please use the Data Quality Forum to report an EDW data error.

Quick Reference Guides

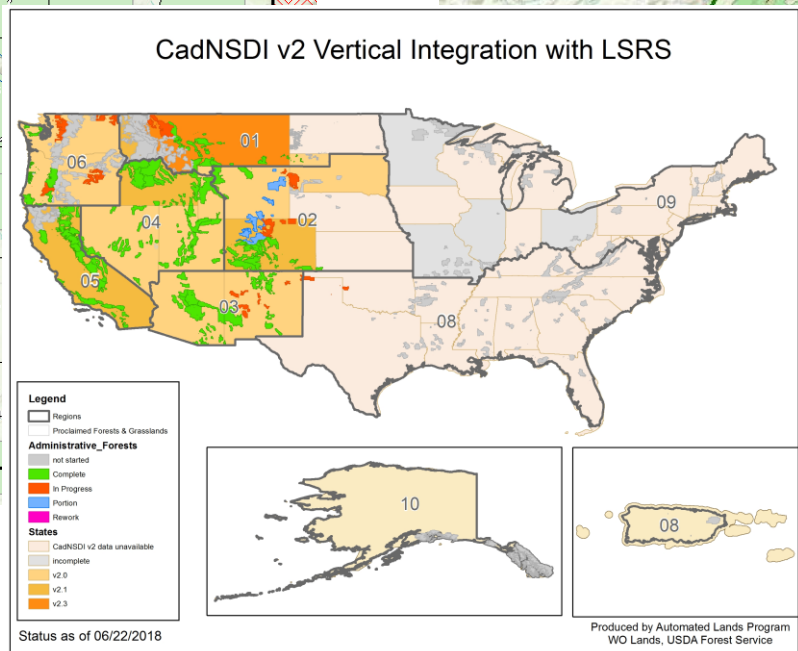
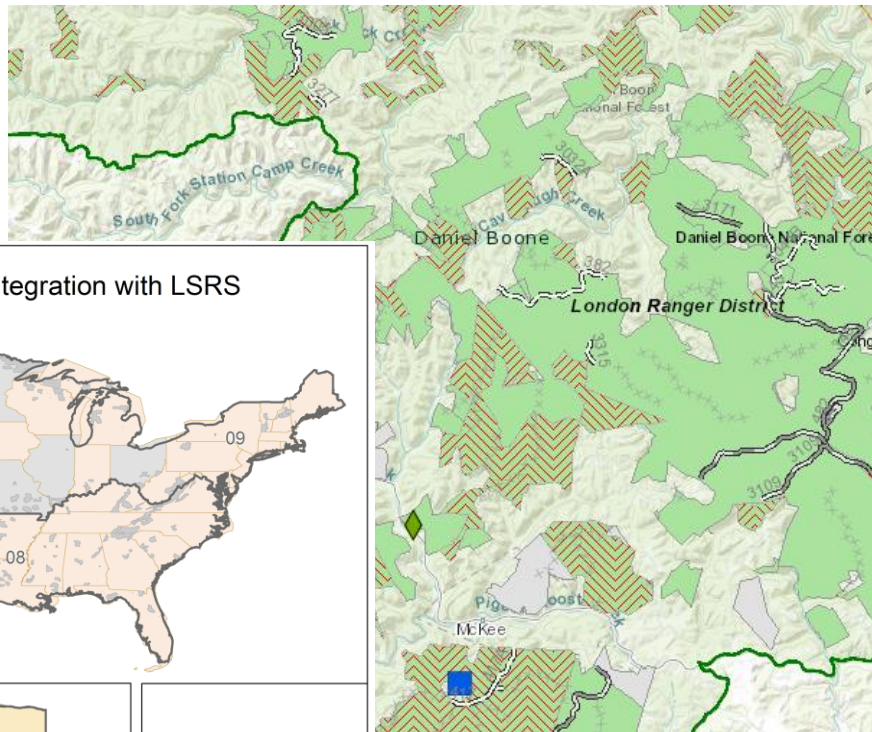
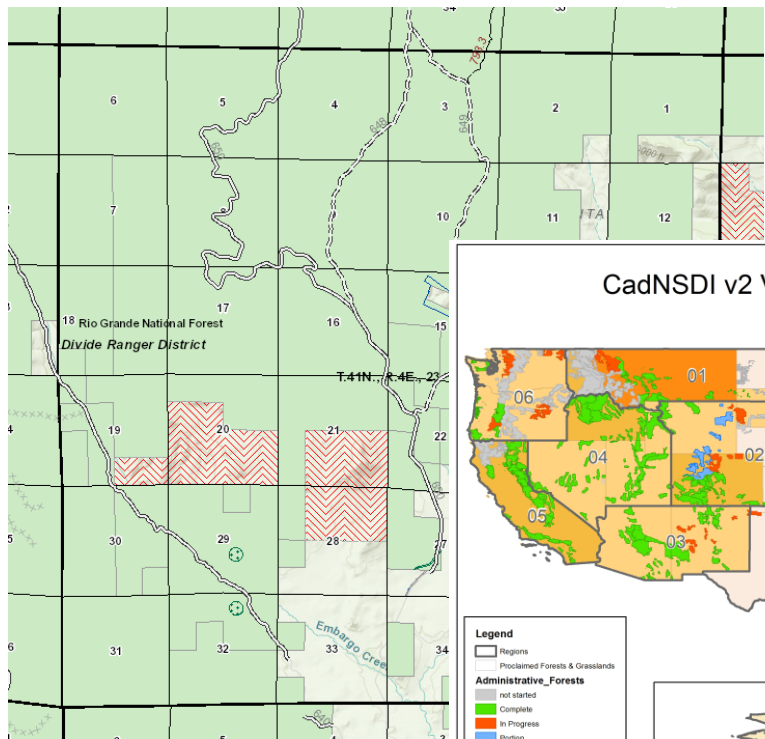
- [How to Submit a Data Quality Forum Error](#)
- [How to Insert a File in a Discussion Board Message](#)
- [Keep Informed on the EDW Using SharePoint Alerts and RSS Feeds](#)

New Actions

ID	Subject	Error Description
1386	TrailNFS_Publish metadata and Feature service needs corrections	1) AttributeSubset descriptions are mixed up 2) In the feature service, The Hiker_Pedestrian
1381	Error in Ranger District Boundary Layer	One of my users (and District Ranger) noticed Zoom in to the District just south of the "Heac"

devinquintana@fs.fed.us

FLWG drives data quality

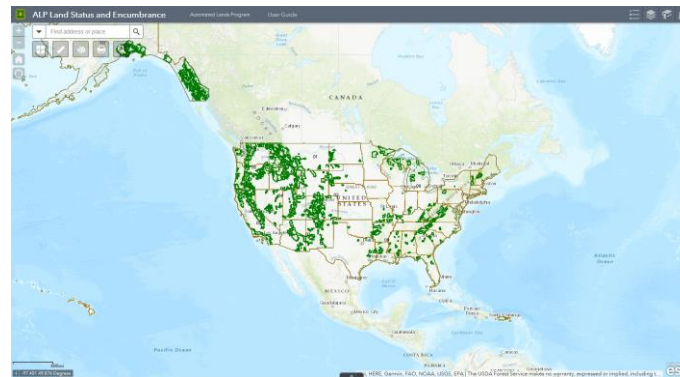
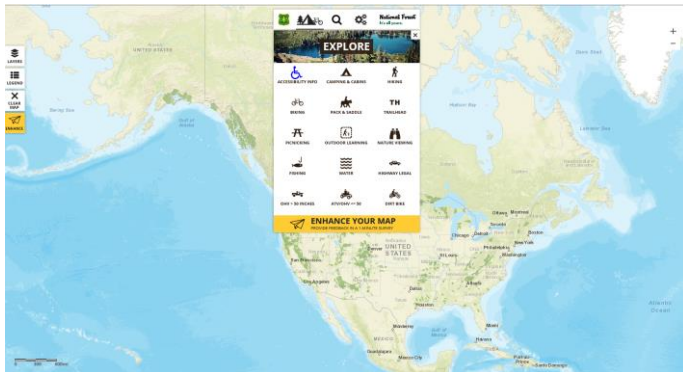


BLM CadNSDI Spatial Update

FLWG drives data quality

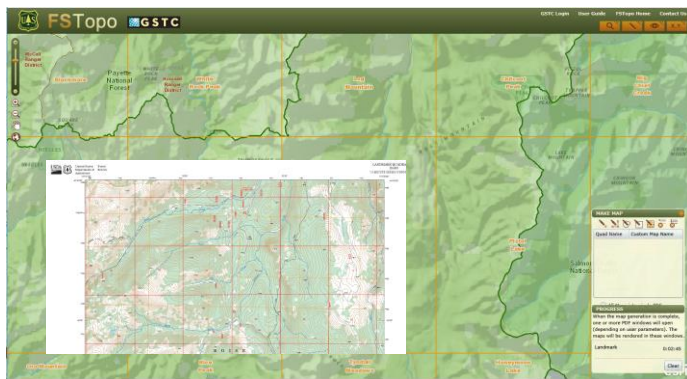
Data Supports Internal Forest Service Business Needs

Interactive
Forest
Visitors
Map



Land Status
and
Encumbrance
Map Service
Viewer

FSTopo
Map



Report Product	Description
Land Area Report (LAR)	A compendium of 28 tables that display Forest Service administered land acreages for variety of land area type categories.
All Service Receipts (ASR)	Acreage data for input to a FS All Service Receipts program that tracks receipts data by unit and computes revenue sharing payments to states and counties.
Payments in Lieu of Taxes (PILT)	An acreage data file provided to the Department of the Interior (DOI) that identifies NFS land area acreages subject to Payments in Lieu of Taxes.
Performance Accountability System (PAS)	Acreage data for the Performance Accountability System (PAS), a Forest Service decision support and reporting tool for measuring and monitoring accomplishments. Note: PAS report data is derived from both the LSRS and Land Adjustment Data System (LADS).
Stewardship Lands Assets (SLA)	A summary count of land unit types, included in the FS Financial Statement.
Stewardship Lands - Acquisitions & Disposals, Attachment A	A list of FY land acquisition and disposal cases and acreages. <i>Stewardship land</i> is land and land rights owned by the Federal Government that are not acquired for or in connection with other General Property Plant and Equipment (GPP&E). Land in the public domain and National Forest System land shall be excluded from GPP&E and referred to as stewardship land.
Wilderness and Wild & Scenic River Areas	The Wilderness and Wild & Scenic River Area report is an annual accounting of National Forest Service (NFS) acreage within National Wilderness (WILD) and National Wild and Scenic River (WSR) designated areas.
National Forest Fiscal Identifiers (NFFID)	A list of active National Forest Fiscal Identifier (NFFID) codes. An NFFID is assigned to any land unit for which fiscal information is tracked.

NFS Land
Area
Reports

FLWG drives data quality

Data supports **external** collaboration Forest Service land status and boundary needs

USDA United States Department of Agriculture
Forest Service

FSGeodata Clearinghouse

Clearinghouse Home Help Contact Us

Enterprise Data

Downloadable Data

- Blots (23)
- Boundaries (43)
- Environment (30)
- Geoscientific Information (8)
- Imagery & Basemaps (43)
- Inland Waters (13)
- Planning Cadastre (14)
- Structure (1)
- Transportation (4)

• Data Extract Tool

• Map Services

Maps

- FSTopo
- Standard Map Products
- Other Map Products

Raster Data

- Caribbean Island Land Cover
- Chugach Updates
- National Forest Type
- Forest Biomass
- RAVG

Special Purpose FS Data

- State and Private

Download National Datasets

Data collected and managed by Forest Service programs is available in a map service and two downloadable file formats – in a shape file and an ESRI file geodatabase. Metadata is available that describes the content, source, and currency of the data. You can filter the list by the topic categories in the menu at the left to help you find information you are interested in. You can view the feature classes in a single dataset by clicking on the name of the parent dataset at the bottom of the abstract.

More FS map services are available in ArcGIS Online

Topic Category Descriptions

Search by keyword: GO

Selected topic category: **Boundaries** (undo)

Feature Classes	Abstract
Administrative Forest Boundaries ESRI geodatabase (15MB) shape file (38MB) Date of last refresh: Jun 19, 2018	An area encompassing all the National Forest System lands administered by an administrative unit. The area encompasses private lands, other governmental agency lands, and may contain National Forest System lands within the proclaimed boundaries of another administrative unit. All National Forest System lands fall within one. [see more] parent dataset: Administration
Forest Service Regional Boundaries ESRI geodatabase (4MB) shape file (10MB) Date of last refresh: Jun 19, 2018	An area encompassing all the National Forest System lands administered by a Region. The area encompasses private lands, other governmental agency lands. All National Forest System lands fall within one and only one Administrative Region Area. parent dataset: Administration



Weekly Refresh Schedule

PARENT: MANAGED SURFACE OWNERSHIP PARCELS		
PADUS FS Managed Surface Ownership Parcels ESRI geodatabase (294MB) shape file (61MB) Date of last refresh: Jun 19, 2018	metadata map service	An area depicting National Forest System (NFS) ownership parcels of the surface estate. parent dataset: PAD_US
PADUS FS National Designated Areas ESRI geodatabase (43MB) shape file (92MB) Date of last refresh: Jun 19, 2018	metadata map service	An area depicting designated National Forest System (NFS) land boundaries, excluding boundaries designated by proclamation. parent dataset: PAD_US
PADUS FS Proclaimed NF and National Grassland Boundaries ESRI geodatabase (18MB) shape file (36MB) Date of last refresh: Jun 19, 2018	metadata map service	An area depicting designated National Forest System (NFS) land boundaries which are designated by proclamation. parent dataset: PAD_US
PADUS FS Scenic and Conservation Easement Areas ESRI geodatabase (279KB) shape file (350KB) Date of last refresh: Jun 19, 2018	metadata map service	An area depicting a type of special use authorization (usually granted for linear rights-of-way) that is utilized in those situations where a conveyance of a limited and transferable interest in National Forest System (NFS) land is necessary or desirable to serve or facilitate authorized long-term uses, and that may be. [see more] parent dataset: PAD_US



USGS National Forest System

Data Catalog Now Viewing Search

Remove All

Manager Type

OPACITY: 60%

Legend

- Federal
- State
- Local Government
- Aboriginal Indian Lands
- Regional Agency Special District
- Non-Governmental Organization
- Private
- Joint
- Territorial
- Unknown

Feature Information

Manager Type: National Forest

Manager Name: Forest Service

Designation: National Forest

Designator: GAD-PADUS1_4Free-USFS-ALP-S_USA-BasicOwnership.gdb/BasicOwnership

Public Access: Open Access

Gap Status: 9 - managed for multiple uses - subject to extractive (e.g. mining or logging) or OHV use

LAT 41.572°N LON 115.642°W 20 km

FLWG drives data quality

Boundaries are published to meet specific **internal and external** business needs

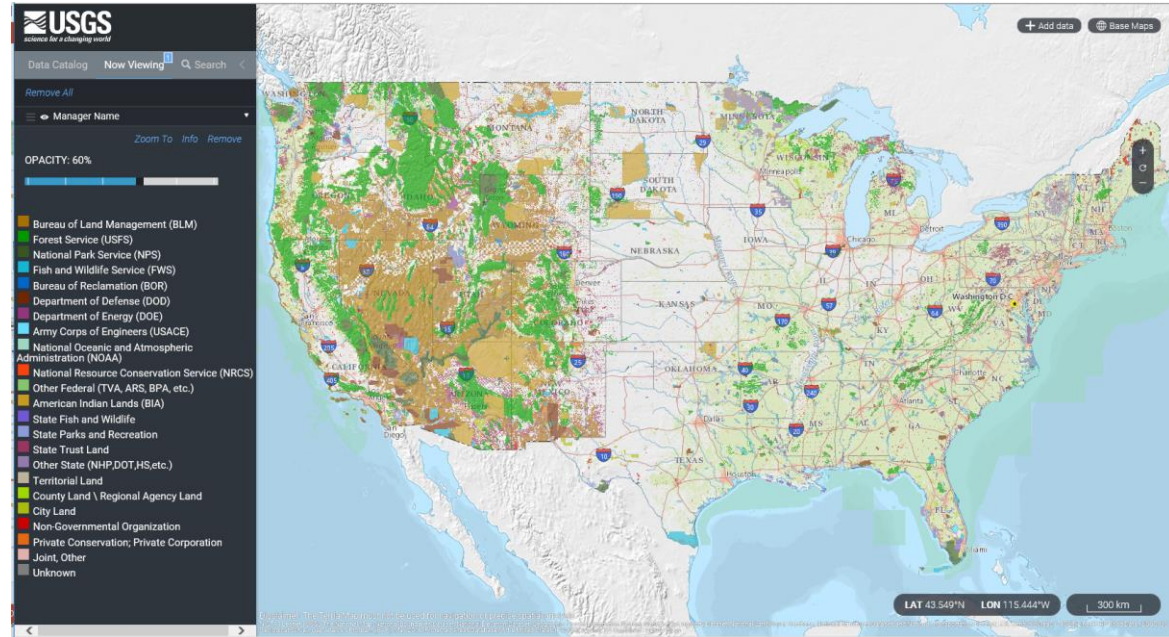
The screenshot shows the USDA Forest Service FSGeodata Clearinghouse website. The 'Boundaries (45)' link in the 'Downloadable Data' section is circled in red. The website header includes the USDA logo and 'FSGeodata Clearinghouse'. The left sidebar contains a 'Downloadable Data' section with a list of categories: Boundaries (45), Geoscientific Information (8), Imagery & Basemaps (42), Inland Waters (13), Planning Cadastre (14), Structure (1), and Transportation (4). The 'Boundaries (45)' link is circled in red. Below the sidebar, there is a 'Download National Datasets' section with a search bar and a list of datasets. The 'Administrative Forest Boundaries' dataset is highlighted, showing its ESRI geodatabase (15MB) and shape file (38MB) formats, and a date of last refresh: Jun 19, 2018.

Feature Classes		Abstract
Administrative Forest Boundaries ESRI geodatabase (15MB) shape file (38MB) Date of last refresh: Jun 19, 2018	metadata map service	An area encompassing all the National Forest System lands administered by an administrative unit. The area encompasses private lands, other governmental agency lands, and may contain National Forest System lands within the proclaimed boundaries of another administrative unit. All National Forest System lands fall within one... [see more] parent dataset: Administration
Original Proclaimed National Forests ESRI geodatabase (14MB) shape file (36MB) Date of last refresh: Jun 19, 2018	metadata map service	The FS National Forests Dataset (US Forest Service Proclaimed Forests) is a depiction of the boundaries encompassing the National Forest System (NFS) lands within the original proclaimed National Forests, along with subsequent Executive Orders, Proclamations, Public Laws, Public Land Orders, Secretary of Agriculture Orders,... [see more] parent dataset: Land
Special Status Areas ESRI geodatabase (16MB) shape file (42MB) Date of last refresh: Jun 19, 2018	metadata map service	A land area that has distinct management/use authorities or agreements for Forest Service action. Includes: Cost Share Agreement Areas, Exchange Authority Areas, Land Adjustment Plan Areas, Forest Reserves, and Secretary's Order Areas. parent dataset: Land
National Forest System Land Units ESRI geodatabase (15MB) shape file (39MB) Date of last refresh: Jun 19, 2018	metadata map service	An NFS Land Unit is nationally significant classification of Federally owned forest, range, and related lands that are administered by the USDA Forest Service or designated for administration through the Forest Service. NFS Land Unit types include proclaimed national forest, purchase unit, national grassland, land utilization... [see more] 37 parent dataset: Land

FLWG benefits

FLWG collaboration and PAD-US standardization benefits

- Standardized data **outside** the National Forest boundary
- **Adjoining** agency boundary conflict identification and resolution
- Multi agency data **maintenance** collaboration
- Multi agency data **publication** collaboration



FLWG drives data quality

Ron Salz

Chief Cartographer, FWS



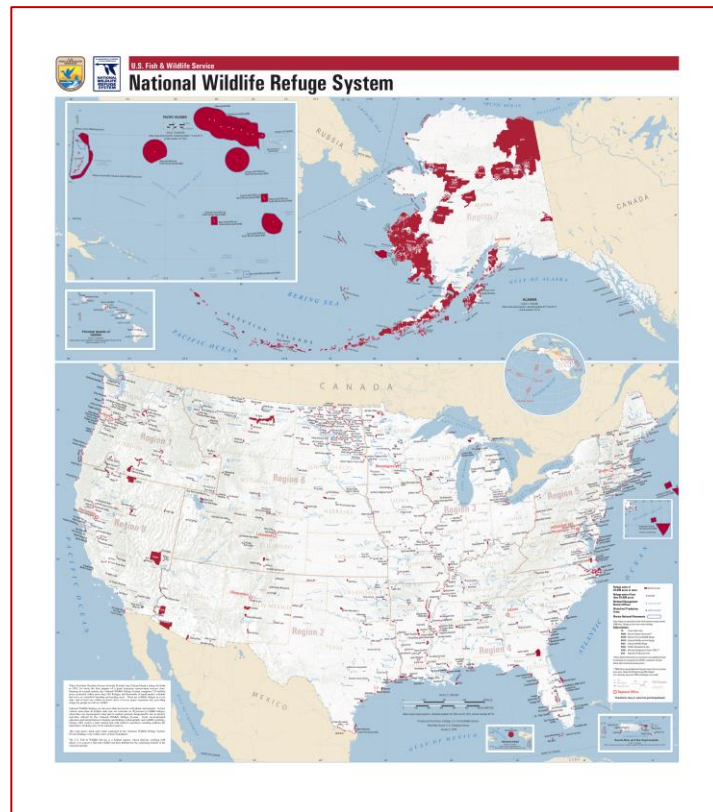
FLWG drives data quality

FWS manages or co-manages over 855 million acres of land and water on:

- 566 National Wildlife Refuges
- 7 National Monuments
- 70 National Fish Hatcheries
- 210 Waterfowl Production Areas
- 50 Coordination areas

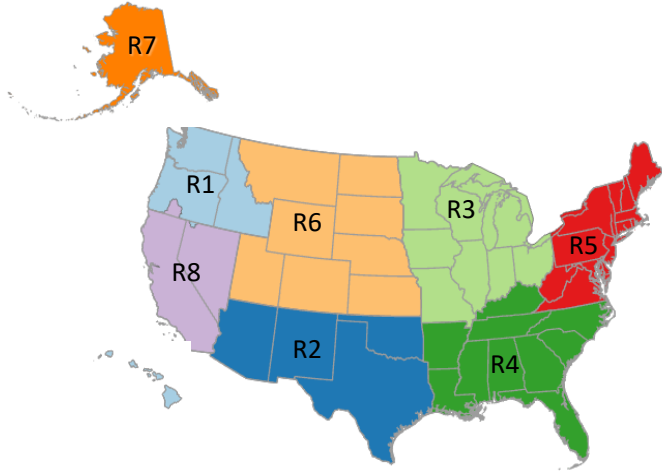
Parcel boundaries are stored in the “FWSInterest” GIS layer.

- Over 46,500 individual parcels
- Made available internally and to the public on www.data.gov

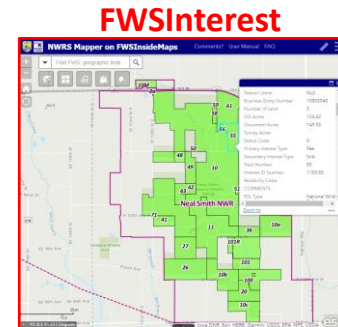
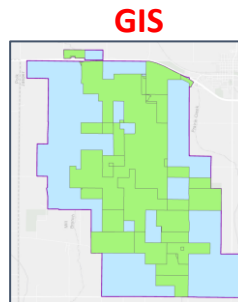
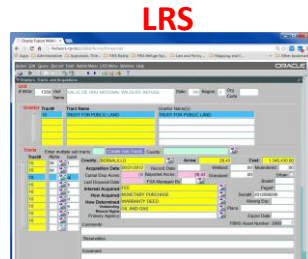


www.fws.gov/refuges/maps

FLWG drives data quality



- Combined efforts of realty specialists, land surveyors and cartographers.
- FWS Land Records System (LRS)
 - Official source of information for all ownership and acres managed.
 - Records data back to the 1800s
- Cadastral Geodatabase FWSInterest feature class contains the spatial data.
- Audit & reconcile databases at the end of each year.



FLWG drives data quality

- Cadastral Data Working Group (CDWG)
 - Realty cartographers from across the country
 - Ongoing improvement of processes and products
- May, 2018 - Updated mapping manual (343 FW5) and new “Mapping and Cadastral GIS Handbook.”
- June 2018 - Updated ArcGIS Pro map templates



Series: Real Property
Part No. 343: Cadastral Surveys and Maps
Chapter No. FW 5: Mapping
Will supersede 343 FW 5, dated May 19, 2006, as amended April 6, 2010 and May 7, 2015.

TABLE OF CONTENTS	
Topics	Sections
Overview	5.1 What is the purpose of this chapter? 5.2 What is the scope of this chapter? 5.3 What are the authorities and terms you need to know to understand this chapter? 5.4 What is the overall policy?
Responsibilities	5.5 Who is responsible for the Service's cadastral geospatial data and maps program?
Requirements and Formats	5.6 What thematic maps does the Service require, and what are their specifications?

OVERVIEW

5.1 What is the purpose of this chapter? This chapter:

A. Defines the standards and basic procedures for the two primary functions that the U.S. Fish and Wildlife Service's (Service) Realty Cartographers must carry out:

(1) Mapping and cartographic production; and

(2) The design, management, and publication of the cadastral geodatabase for the Service; and

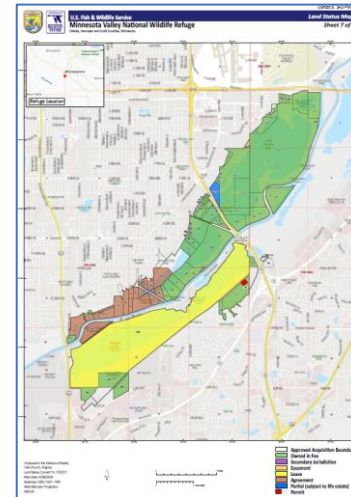
B. Requires that employees involved in the Division of Realty's cartography program follow the guidance in *The Mapping and Cadastral Geographic Information Systems (GIS) Handbook (The Mapping Handbook)*.



The Mapping & Cadastral Geographic Information Systems (GIS) Handbook

National Wildlife Refuge System
Division of Realty
Cadastral Data Working Group

May 2018



FLWG drives data quality

<https://www.fgdc.gov/what-we-do/>

FGDC.GOV
FEDERAL GEOGRAPHIC DATA CENTER

Home Who We Are What We Do Initiatives Organization Resources

NGDA Themes & Datasets

The A-16 National Geospatial Data Asset (NGDA) Portfolio is made up of one or more associated NGDA Data Themes and more than 176 NGDA Datasets make up the Themes and NGDA Datasets are managed by Theme Leads respectively. They use industry-accepted practices to improve leading to better outcomes. Data within Themes are managed on the [Geospatial Platform](#).

A-16 NGDA Portfolio

- NGDA Theme
 - NGDA Datasets
- NGDA Theme
 - NGDA Datasets
- NGDA Theme
 - NGDA Datasets

GeoPlatform

Featured

- Release Overview
- Map Collaboration
- ArcGIS Online Support
- Cloud Hosting Services
- GeoPlatform on YouTube

Get Involved

- Communities
- Share Geospatial Resources
- Data Acquisition Services

Explore Data

- Object Editor
- GeoPlatform ArcGIS Organization
- Search Data.gov
- Search Marketplace
- Resources

Apps & Services

- Map Viewer
- Map Manager
- Marketplace Preview
- FGDC Service Status Checker

About

- About GeoPlatform
- Help
- FAQ
- Glossary of Terms
- Contact Us
- Style Guide
- Dynamic Communities

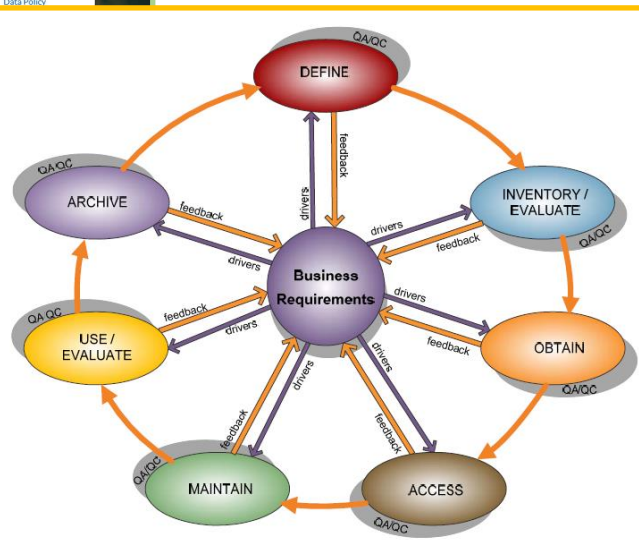
Policies & Notices

- Data Policy

Features & Announcements

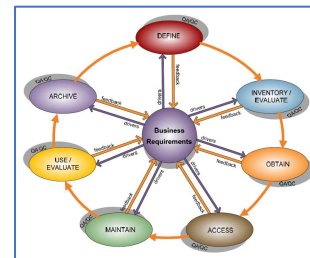
- Current Wildland Fires
- Hurricane Irma Response and Recovery
- GeoPlatform Cloud

<https://www.geoplatform.gov/>



<https://www.fgdc.gov/metadata/images/a16-data-lifecycle.jpg/view>

FLWG drives data quality



Datasets

NGDA ID (low-high) 2015 and 2017 Lifecycle Maturity Assessment levels are not comparable. For more information see [Year over Year Maturity Change](#).

Filter by Keywords
Specify keywords...

Filter by Assessment(s) ▾

☒ 2017

NGDA ID	Year	Dataset Name	General	Define/ Plan	Inventory/ Evaluate	Obtain	Access	Maintain	Use/ Evaluate	Archive	Overall	Theme	Agency
Rollup			4/5	3/5	3/5	4/5	4/5	4/5	4/5	4/5	4/5		

Datasets

NGDA ID (low-high) 2015 and 2017 Lifecycle Maturity Assessment levels are not comparable. For more information see [Year over Year Maturity Change](#).

Filter by Keywords
Specify keywords...

Filter by Assessment(s) ▾

☒ 2017

Filter by Theme(s) ▾

☒ Cadastre 1

Filter by Agency(s) ▾

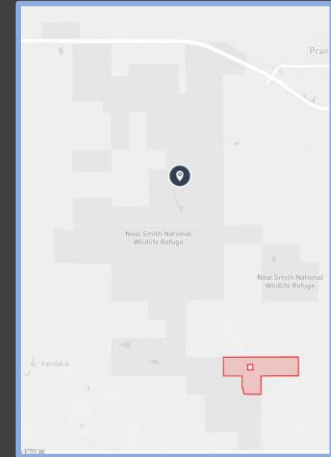
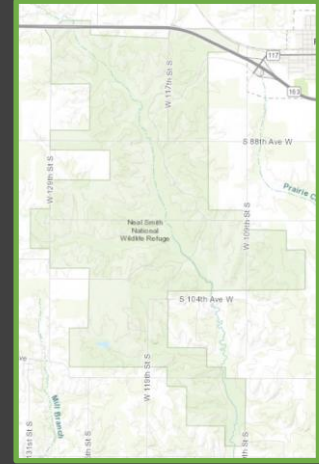
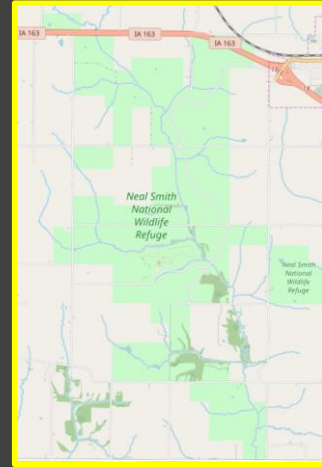
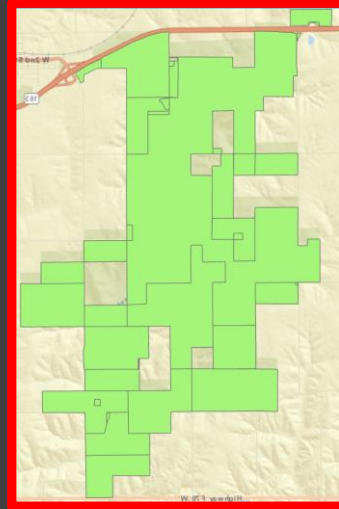
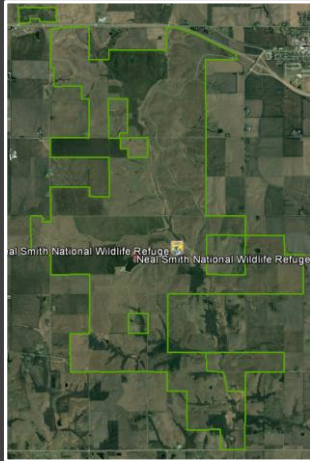
☒ DOI-FWS 1

NGDA ID	Year	Dataset Name	General	Define/ Plan	Inventory/ Evaluate	Obtain	Access	Maintain	Use/ Evaluate	Archive	Overall	Theme	Agency
Rollup			4/5	3/5	5/5	5/5	5/5	4/5	4/5	1/5	4/5		
14	2017	FWS Interest	4/5	3/5	5/5	5/5	5/5	4/5	4/5	1/5	4/5	Cadastre	DOI FWS

<input type="checkbox"/> Transportation	19	2017	Outer Continental Shelf Lease Blocks Alaska Region NAD83	5/5	1/5	5/5	5/5	5/5	1/5	4/5	1/5	3/5	Cadastre	DOI BOEM
	27	2017	Protected Areas Database of the United States PADUS	3/5	4/5	4/5	5/5	5/5	4/5	5/5	3/5	4/5	Cadastre	DOI USGS

<https://dashboard.geoplatform.gov/lma>

FLWG drives data quality — Guidance to basemap providers



FLWG benefits

- We discuss how to improve data and processes (manuals, handbooks, data standards, templates, data translators, maps, etc.)
- FLWG is the forum for the National Geospatial Data Asset (NGDA) Cadastre Theme data managers.
- We use the FGDC Lifecycle Maturity Assessment tools to improve our contributions and thus the overall quality of PAD-US.
- Basemap guidance will improve the quality of mapping applications for everyone, using an accurate and authoritative data set.

The data is foundational. We work together to improve the quality.

FLWG drives data quality

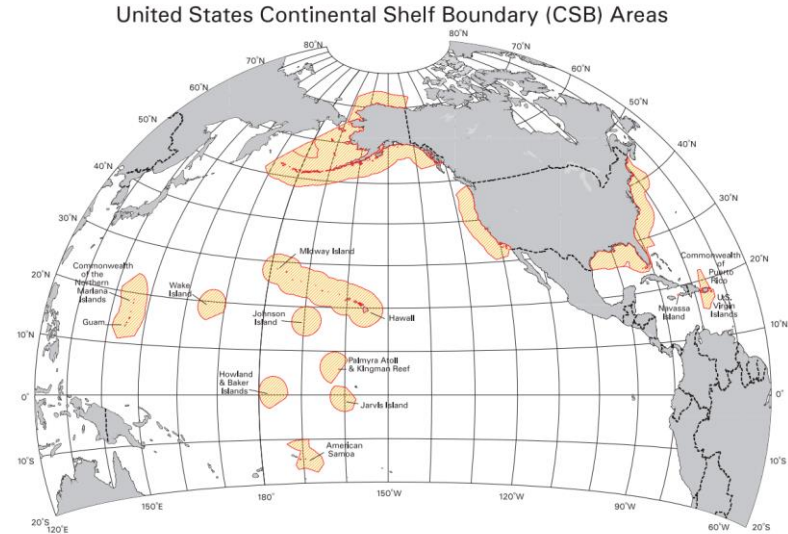
Doug Vandegraft

Chief, Geospatial Services Division, BOEM



FLWG drives data quality

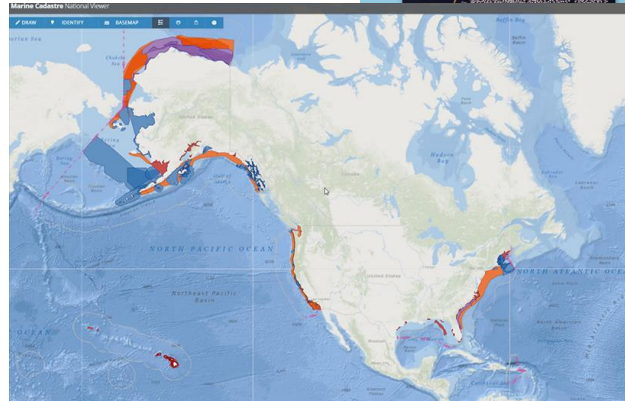
- BOEM manages mineral/energy resources on Outer Continental Shelf areas
- The **Offshore Cadastre** includes the block grids and official boundaries – the base for BOEM offshore maps and leasing processes.
- Gulf of Mexico, Atlantic, Pacific West Coast, and Alaska are complete
- Currently mapping Hawaii
- Future mapping: Pacific Territories and Possessions; Extended Continental Shelf areas

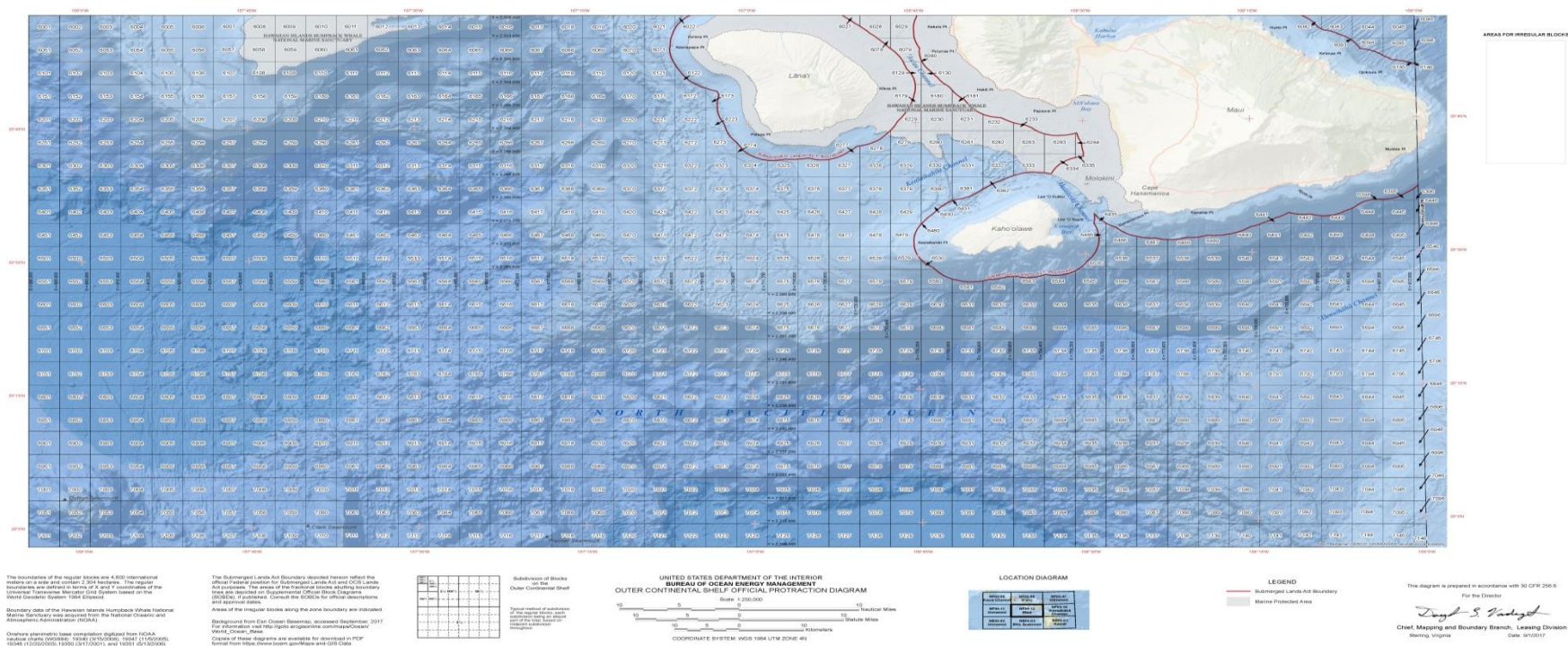


FLWG drives data quality

BOEM migrated from in-house mapping to GIS:
Boundary Delineation System enables BOEM
to map quickly/accurately

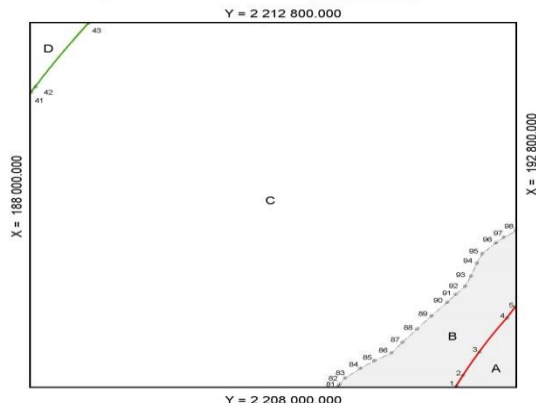
MarineCadastre.gov is a BOEM/NOAA project to provide authoritative data for offshore areas





OCS Planning Area Name Hawaii
OPD Name Alenuihaha Channel
Submerged Lands Act Boundary Radius 5556.000
Limit of "8(g) Zone" Radius 11 112.000


OPD Number NF05-10
Block Number 7102
Datum WGS 84
UTM Zone 5N
Units Meters
Previous SOBD
Signature Date _____





Federal 8(g) Area C = 0000.000000 ha
Federal Non-8(g) Area D = 0000.000000 ha
Sanctuary Area B = 0000.000000 ha
Sanctuary / State Area A = 0000.000000 ha
Total Area 2304.000000 ha

Offshore Intersections			Contributing Baseline Points			Tangent Baseline End Points		
	X	Y		X	Y		X	Y
1	239 200.000	3 787 203.183		1-2	239 200.000	3 787 203.183		
2	239 200.000	3 787 203.183	* 2-3	239 200.000	3 787 203.183	*	239 200.000	3 787 203.183
3	239 200.000	3 787 203.183						
4	239 200.000	3 787 203.183						
5	239 200.000	3 787 203.183						
41	239 200.000	3 787 203.183						
42	239 200.000	3 787 203.183						
43	239 200.000	3 787 203.183						
81	239 200.000	3 787 203.183						
82	239 200.000	3 787 203.183						
83	239 200.000	3 787 203.183						
84	239 200.000	3 787 203.183						
85	239 200.000	3 787 203.183						
86	239 200.000	3 787 203.183						
87	239 200.000	3 787 203.183						
88	239 200.000	3 787 203.183						
89	239 200.000	3 787 203.183						
90	239 200.000	3 787 203.183						
91	239 200.000	3 787 203.183						
92	239 200.000	3 787 203.183						
93	239 200.000	3 787 203.183						
94	239 200.000	3 787 203.183						
95	239 200.000	3 787 203.183						
96	239 200.000	3 787 203.183						
97	239 200.000	3 787 203.183						
98	239 200.000	3 787 203.183						

* Tangent Segment

 Submerged Lands Act Boundary

 Limit of "8(g) Zone"

 Marine Protected Area

* Tangent Segment
— Submerged Lands Act Boundary
— Limit of "8(g) Zone"
■ Marine Protected Area

For the Director, BOEM _____ Date _____

For HI _____ Date _____

Print Name _____

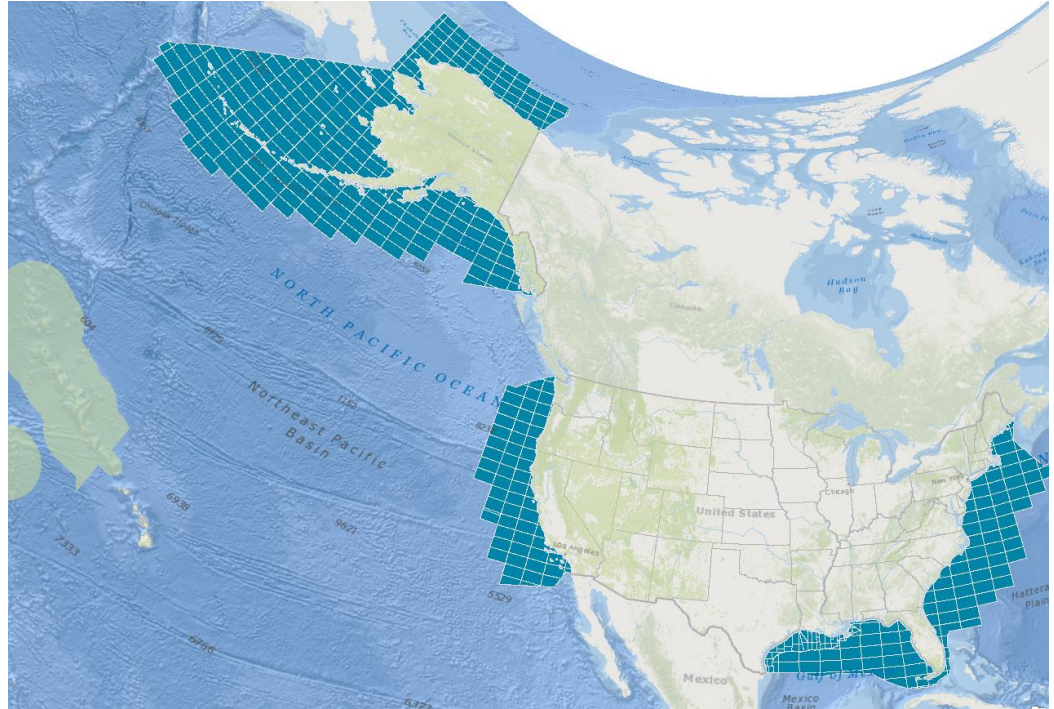
Print Name _____

FLWG drives data quality

First time **BOEM Offshore Cadastre** is included in PAD-US data (v. 2).

Broad definition of **Protected**

Includes offshore areas available for development of energy projects to benefit the U.S.



FLWG Benefits Summary

- Most questions start with **where**?
- Develops **foundational** dataset – PAD-US
- Fosters broad **cooperation** – DOI, Ag, Commerce, DOD, etc.
- Facilitates **vision** across admin boundaries
- Provides **authoritative** data
- Supports vertical **integration** – no gaps and overlaps
- Helps produce **scale** independent product

Find public land recreation with PAD-US

Bob Ratcliffe

Chief, Conservation and Outdoor Recreation, NPS



Find recreation with PAD-US

Federal Recreation Council

- **Coordination** for land/water managing agencies
- Support **outreach** for tourism, improve **management** for recreation



Find recreation with PAD-US

1980s map of federal recreation – time for an **update!** (with better data, too...)



PAD-US 2.0

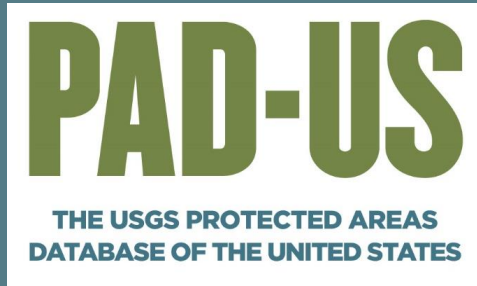


Find recreation with PAD-US

- **How to get** the Federal Recreation brochure . . .
- **Next steps:**
 - PAD-US goal – have full inventory by 2020 (add urban parks from TPL, other updates)
 - Full inventory will be an asset for Recreation.gov

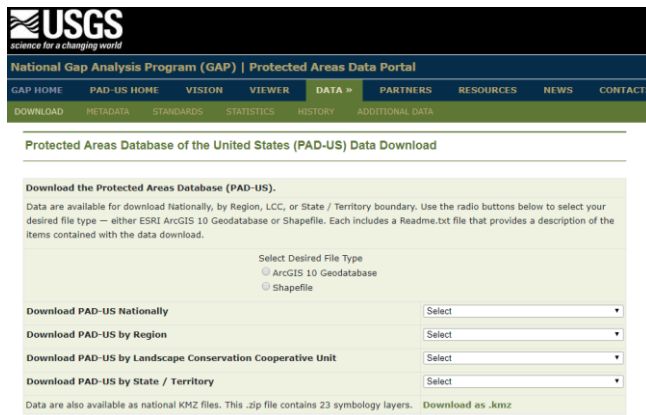


Get the data!

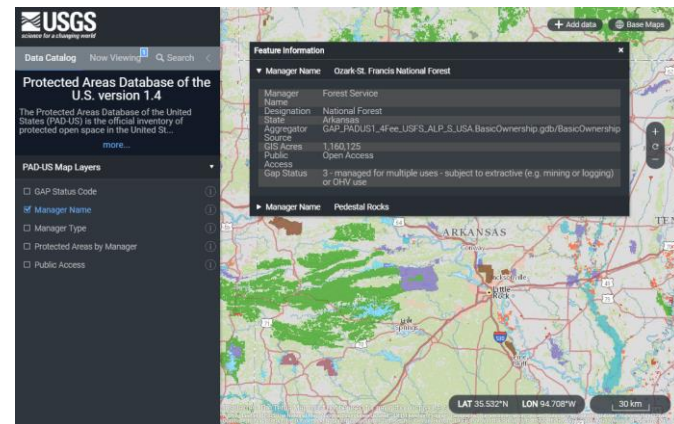


Get PAD-US data

Data downloads



Online mappers



Protected Areas (PAD-US) – Version 1.4 web services

- All Protected Areas – Green
- Terrestrial Protected Areas – Gray
- Terrestrial Protected Areas – Green
- Easements
- Categories – Fee, Easement, Other, MPA
- Categories – Fee, Easement, Other
- Public Open Space
- Public and Private Open Space
- Public Access
- General Agency Level
- Mid Agency Level
- Fine Agency Level
- Federal Management Agencies
- Federal, Tribal, Other

Downloadable print map files

■ All Managers



poster-sized (.pdf)
for print/web (.jpg)

■ Federal Managers



poster-sized (.pdf)
for print/web (.jpg)

■ Protection Status:



poster-sized (.pdf)
for print/web (.jpg)



More Info

<https://gapanalysis.usgs.gov/padus/>

USGS
science for a changing world

National Gap Analysis Project (GAP) | Protected Areas Data Portal

USGS Home
Contact USGS
Search USGS

Search this site. Go Sitemap

GAP HOME **PAD-US HOME** VISION VIEWER DATA PARTNERS RESOURCES NEWS CONTACTS

Protected Areas Database of the U.S. (PAD-US) - Land Management

Enhancing data for protected areas in the U.S.

We are creating a spatially explicit inventory that lets any user – from the general public to professional land managers – know exactly what lands are protected anywhere in the United States and allows them to easily use this inventory in conservation, land management, planning, recreation and other uses.

[Learn more: Download PAD-US Factsheet >](#)

Best Data Practices

California

The California Protected Areas Database (CPAD) contains GIS data about lands that are owned in fee and protected for open space purposes by almost 1,000 public agencies or non-profit organizations. Download a flyer describing CPAD. ... [Learn more >>](#)

PAD-US News

- Mapping Public Lands in the United States >>
- New Report Released: Completing America's Inventory of Public Parks and Protected Areas: An Action Plan for 2016-2020 >>
- Webinar Recording Available for PAD-US Presentation to LCCs >>
- Interior's Office of Policy Analysis Seminar to Feature PAD-US >>

Access PAD-US Data

- DOWNLOAD DATA
- PROTECTED AREAS VIEWER
- DOWNLOAD MAPS
- WEB SERVICES

www.protectedlands.net

ProtectedLands.net

A Resource for the Protected Areas Database of the United States (PAD-US)

Map Data Uses Vision Partners News About

PAD-US GIS data supports biodiversity, recreation, health, energy siting and many other uses.

[Explore the Map](#) [Be a Data Partner](#) [Download Data, Reports](#) [For Developers](#)

The **Protected Areas Database of the United States (PAD-US)** is the national inventory of America's parks and other protected lands, and is published by the **USGS Gap Analysis Program**.

ProtectedLands.net showcases uses of PAD-US and provides additional information about the data.

How PAD-US is Being Used

- Energy sites that protect natural resources
- Parks and wilderness next to cities
- Access to active living and recreation

ProtectedLands.net is a project of **GreenInfo Network**, a nonprofit technology support organization. This web site is a supplement to the **USGS PAD-US** web site, not an official USGS web site.

© 2014 GreenInfo Network. All rights reserved. Home | Privacy Policy | Contact Us

What's next?

1. **Complete** the inventory by 2020 (= fully “caught up”)
2. Improve database **technology**

Federal



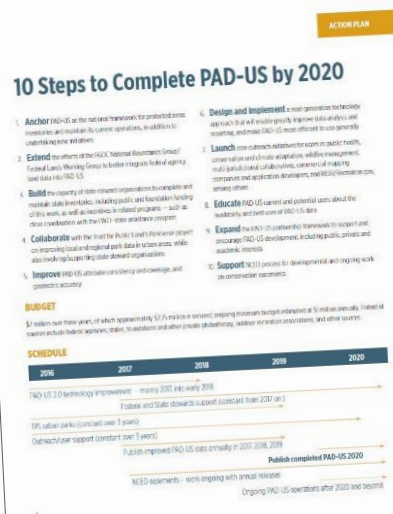
State, regional, local, NGO

0%

100%

What's next

Read about the PAD-US Vision
www.protectedlands.net/vision



1. STARTING POINTS — RATIONALES AND USER NEEDS

Overview of Data Needed
 Why We Have Public Parks and Other Protected Areas
 The Value of Having a Complete Inventory
 What User Needs Should the Inventory Support?

2. ABOUT PUBLIC PARKS AND PROTECTED AREAS DATA

Concepts and Terms
 About Spatial Inventories
 Structure of a Parks and Protected Areas Inventory
 Who's Who

3. THE PROTECTED AREAS DATABASE OF THE U.S. (PAD-US)

The Status of PAD-US
 The State of PAD-US by State
 How PAD-US is Developed
 The Structure of PAD-US
 Data Related to PAD-US
 PAD-US: What More is Needed?

4. RECOMMENDED PRACTICES

General Principles
 Data Framework
 Management System for Data

5. ACTION PLAN - Tasks, Funding and Sources

How you can help build PAD-US

- **Support** agency data stewards, push to develop data quality
 - FLWG making great progress for federal data
 - Next step - help more states do better (State Lands Working Group, etc.)
- **Share** PAD-US 2.0 release when available
- Let us know **how you use** the data (or improvements needed)

Contacts

Lisa Johnson

PAD-US Coordinator, USGS Cooperator

lisajjohnson@boisestate.edu



Troy Warburton

Automated Lands Program Manager, USFS

trwarburton@fs.fed.us



Ron Salz

Chief Cartographer, FWS

ron_salz@fws.gov



Doug Vandegraft

Chief, Geospatial Services Division, BOEM

douglas.vandegraft@boem.gov



Bob Ratcliffe

Chief, Conservation and Outdoor Rec, NPS

bob_ratcliffe@nps.gov



Discussion

Your turn!

PAD-US

THE USGS PROTECTED AREAS
DATABASE OF THE UNITED STATES